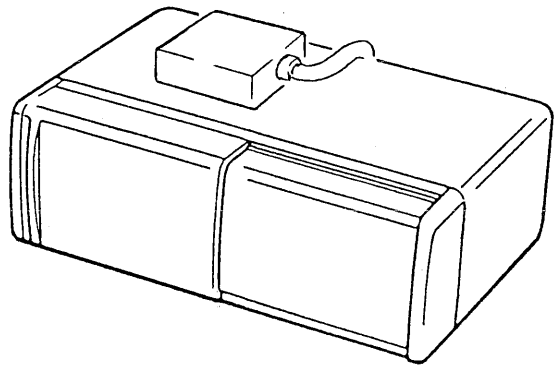
CDX-5N54G

SERVICE MANUAL

US Model
Australian Model



Optical Device Name	KSS-310AAM

SPECIFICATIONS

The player

Laser Diode Properties	Material: GaAlAs Wavelength: 780 nm Emission duration: Continuous Laser Output power: Less than 44.6μW* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.
Output voltage	3 Vrms ± 3 dB
Frequency response	20 Hz – 20,000 Hz ± 3 dB
Wow and flutter	Below measurable limit
Harmonic distortion	0.05% or below (1 kHz)
Signal to noise ratio	85 dB or more (1 kHz)

Power section and others

Power requirements and voltage
Car battery, negative ground 13.2 V (10.8 – 15.6 V) DC

Design and specifications subject to change without notice.

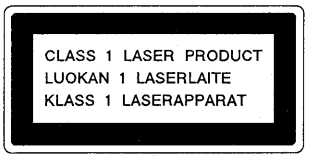
CD AUTO CHANGER
NISSAN PART NO. 28184-68U00
COMPACT DISC PLAYER
SONY®

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.



This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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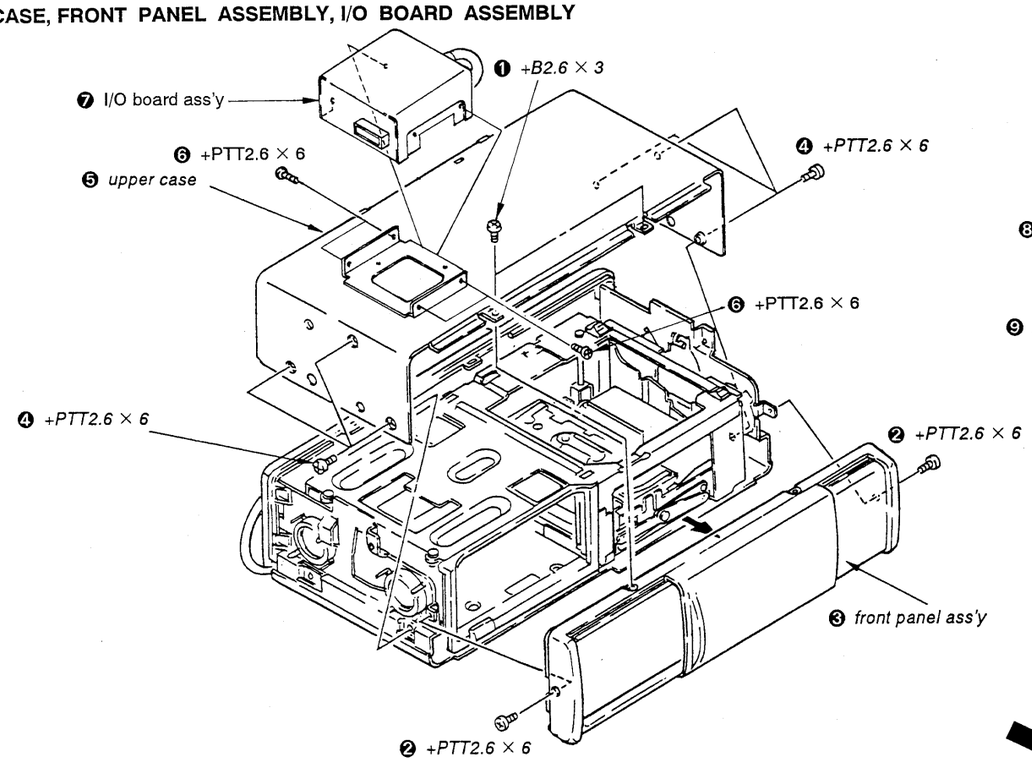
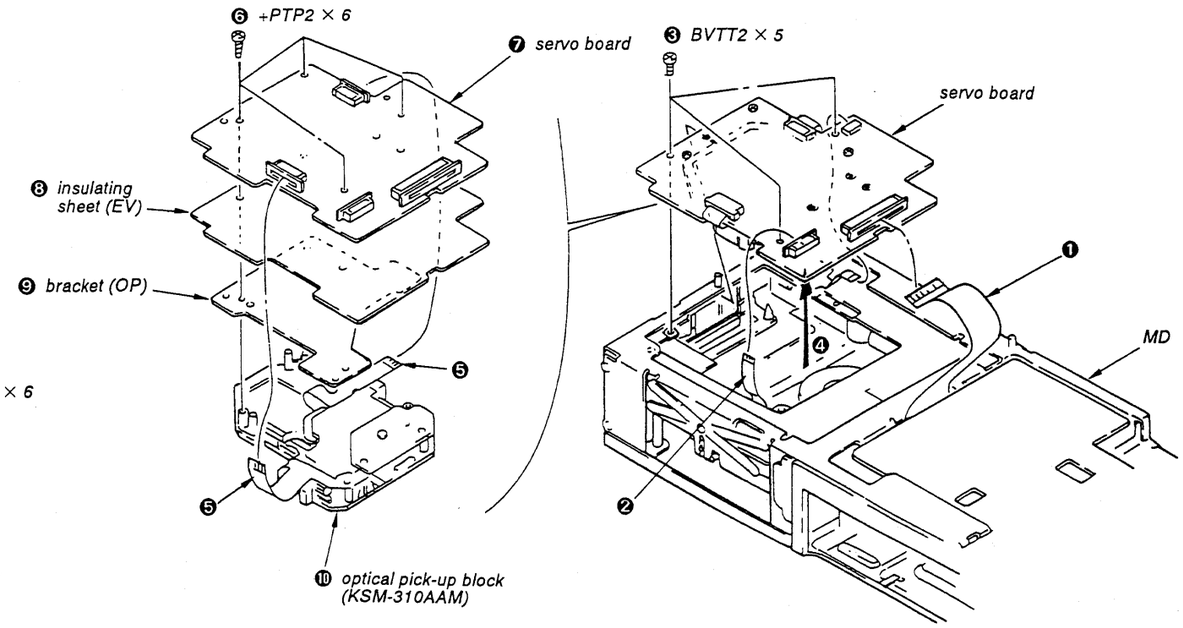
SECTION 1
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

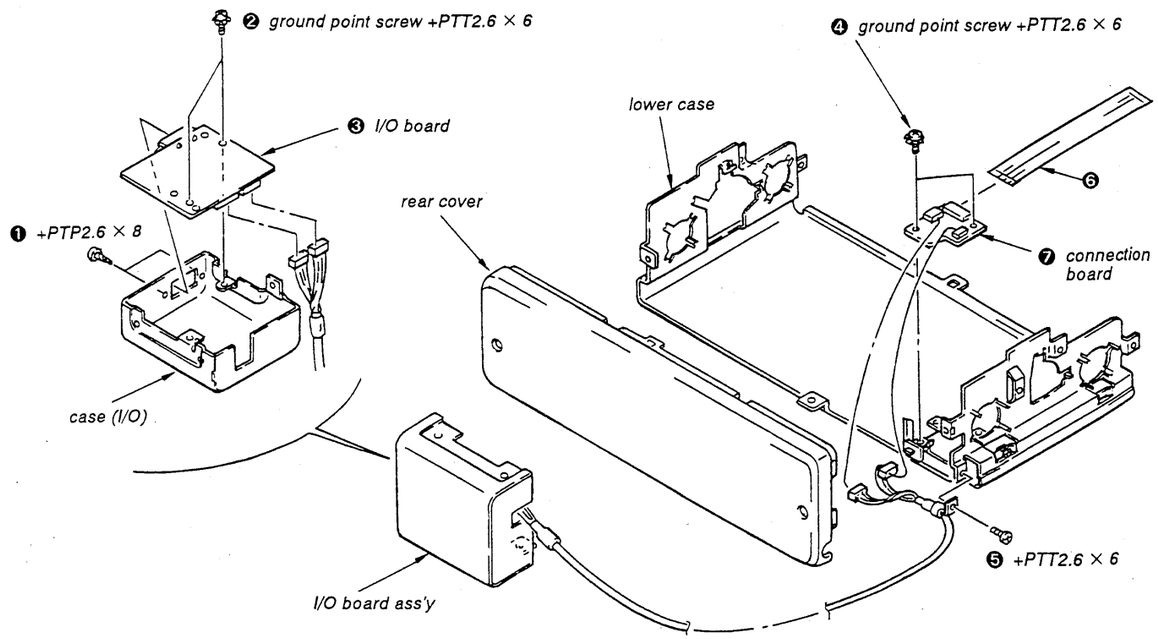
UPPER CASE, FRONT PANEL ASSEMBLY, I/O BOARD ASSEMBLY



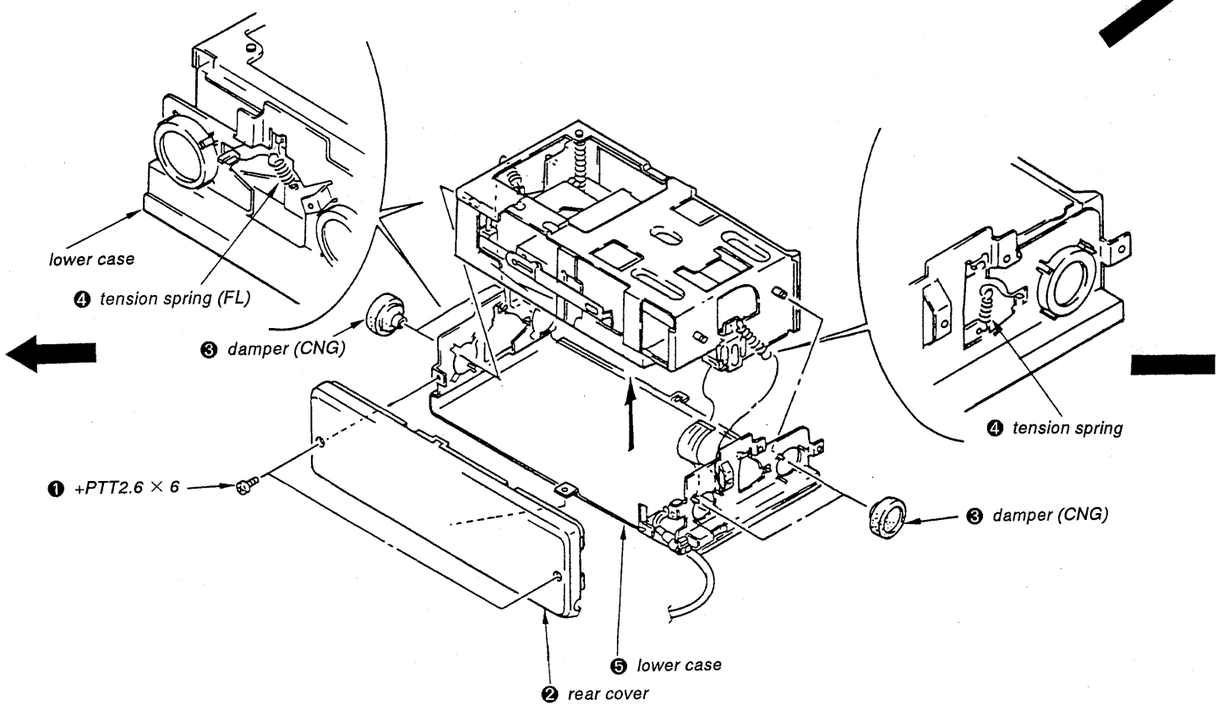
OPTICAL PICK-UP BLOCK



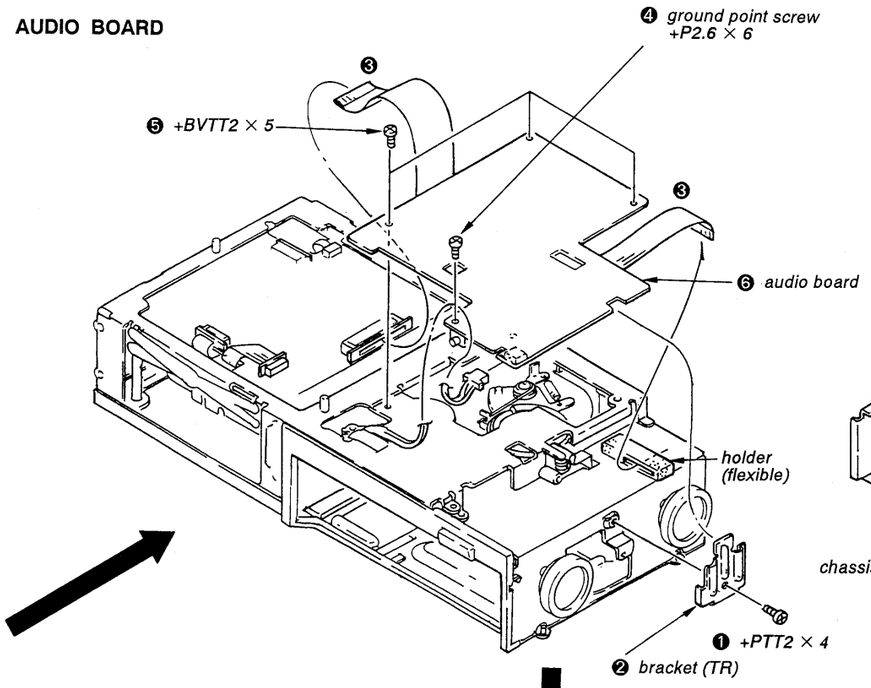
I/O BOARD, CONNECTOR BOARD



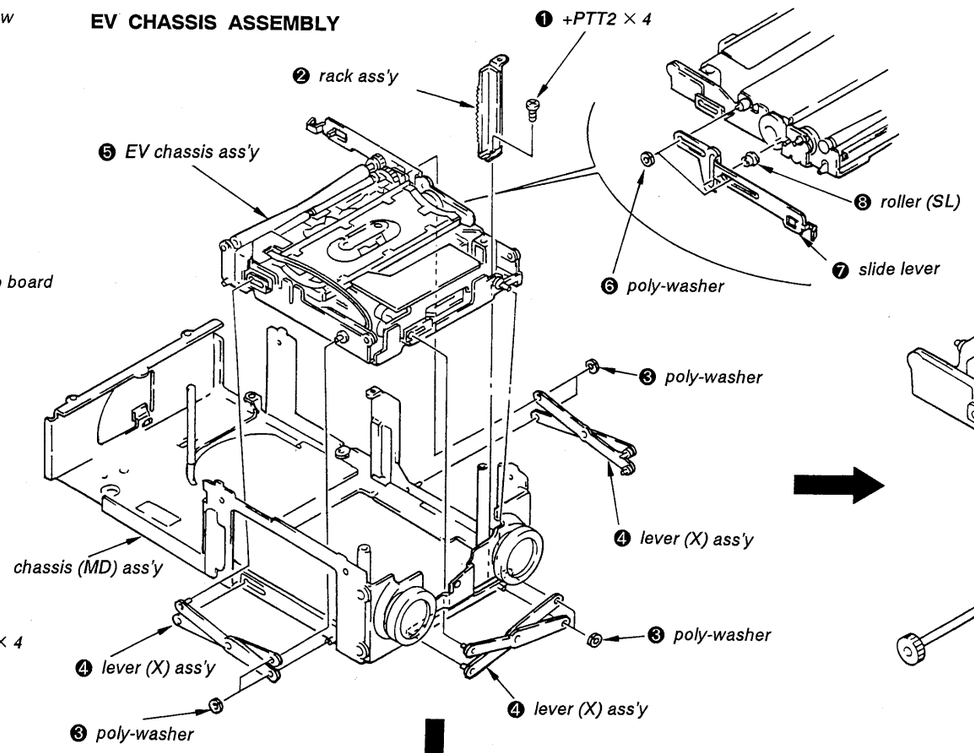
LOWER CASE, REAR COVER



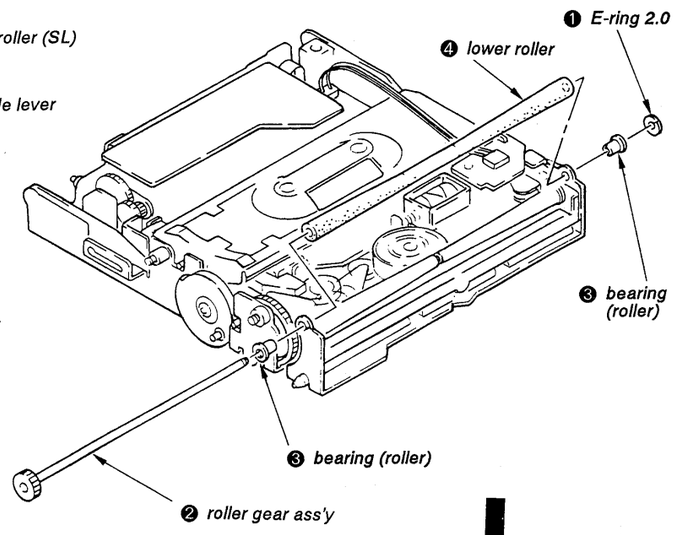
AUDIO BOARD



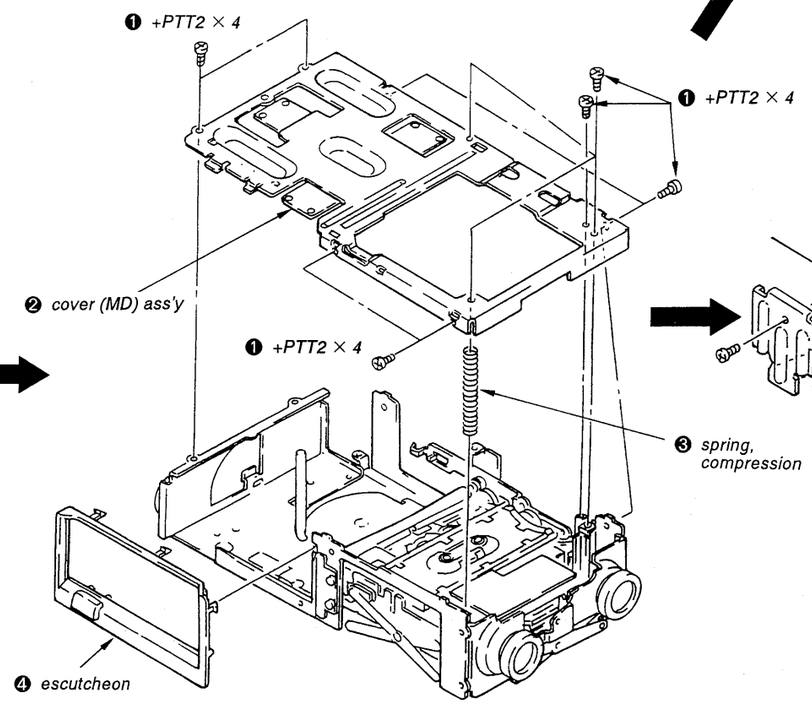
EV CHASSIS ASSEMBLY



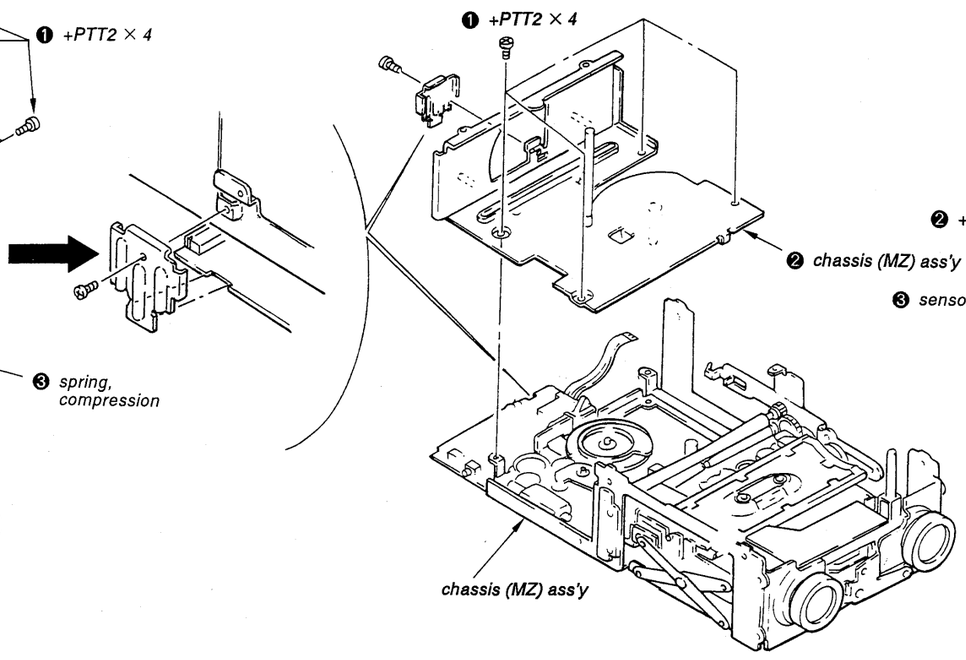
LOWER ROLLER



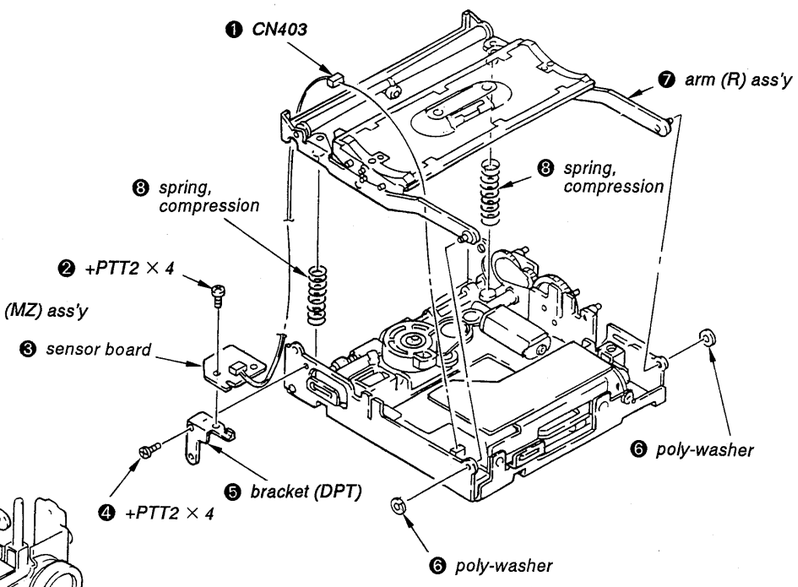
COVER (MD) ASSEMBLY, ESCUTCHEON



CHASSIS (MZ)



SENSOR BOARD, ARM (R) ASSEMBLY

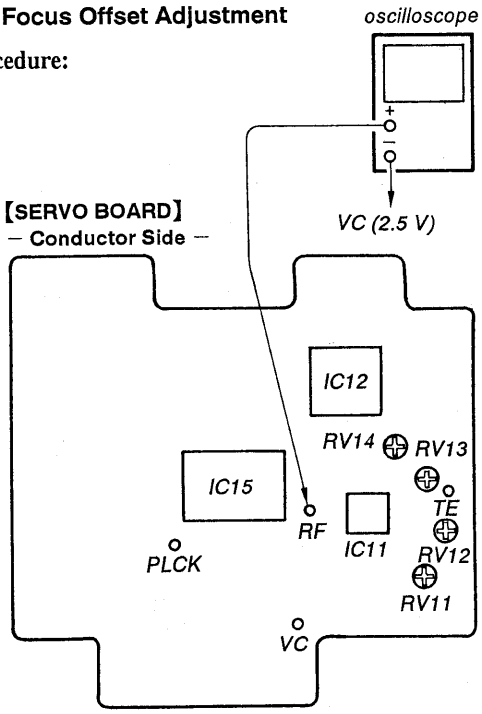


SECTION 2
ELECTRICAL ADJUSTMENTS

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code: 3-702-101-01, but only when indicated.
3. Power supply voltage: DC13.2 V (more than 3A).

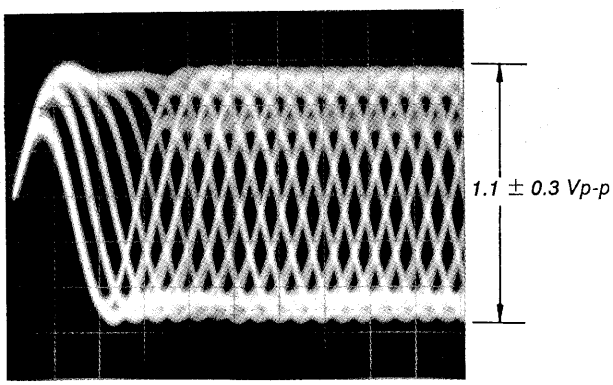
1. Focus Offset Adjustment

Procedure:



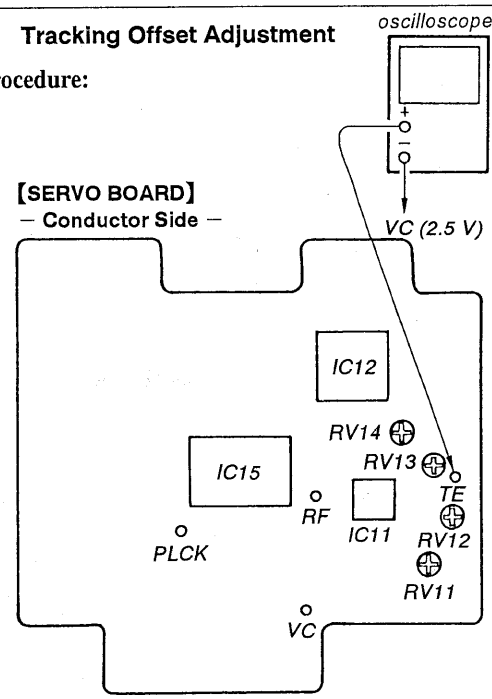
1. Connect the oscilloscope to SERVO board test point RF.
2. Put the set into play mode by loading the disc.
3. Adjust (SERVO board) RV12 so that the oscilloscope. Waveform eye pattern is good.
   (A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.)

Volt/Div: 200 mV
Time/Div: 0.5 μSec



2. Tracking Offset Adjustment

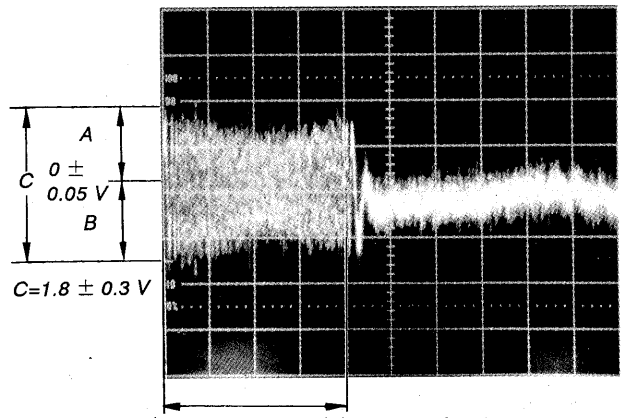
Procedure:



1. Connect the oscilloscope to SERVO board test point TE.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ AMS ⏭ (or ◀◀ , ▶▶) button of an exclussive controller, then, check the traverse waveform*.
4. Adjust RV11 (SERVO board) so that oscilloscope reading is symmetrical in relation to 0 ± 0.05 V.

*Traverse waveform: This is the tracking error waveform appears when crossing the track.

Volt/Div: 0.5 V
Time/Div: 2 mSec
Center 0 ± 0.05 V



trverse waveform (100 track jump waveform)

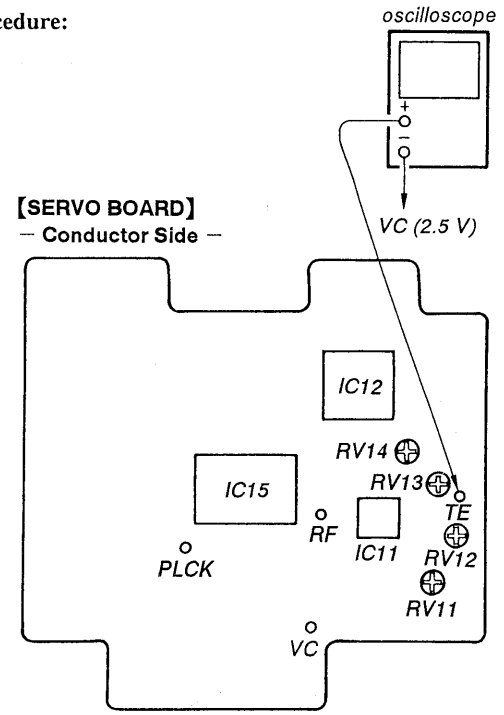
3. Tracking Gain Adjustment (coarse adjustment)

This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV13

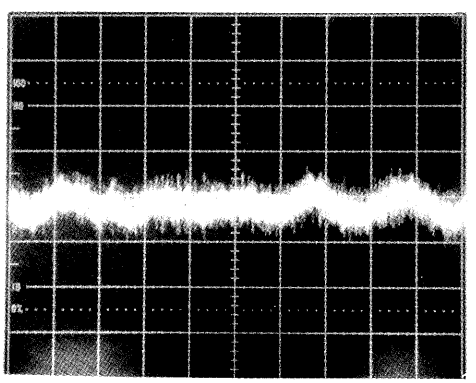
This adjustment should be performed after focus offset and tracking offset adjustments are completed.

Procedure:



1. Connect the oscilloscope to SERVO board test point TE.
2. Put the set into play mode by loading the disc.
3. Turn SERVO board RV13 from clockwise stop, then check the oscilloscope waveform.
   Fix RV13 at the position where the wavwaveform disappears.

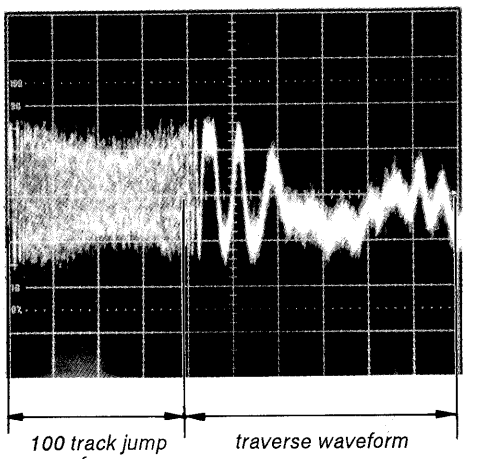
Volt/Div: 0.5 V
Time/Div: 2 mSec



waveform when the wave appears

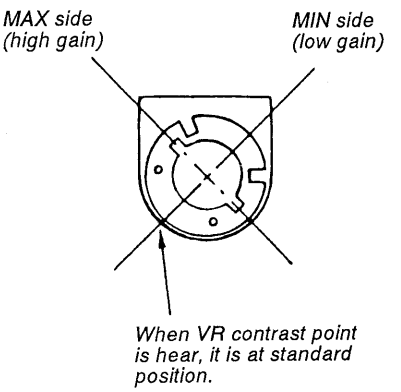
- **When gain lowered...**

When selecting by pressing ⏮ AMS ⏭ button, brake application is poor because of low tracking gain. Threfore, the traverse waveform appears after the 100 track jump waveform, then the selection will be located slowly.

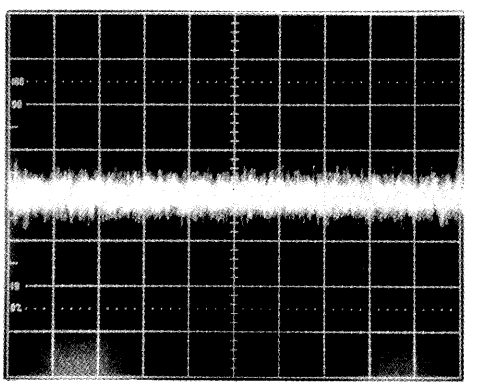


- **When gain is highered...**

Operation noise is heard due to a scratch or dust, then operation will be instability.



RV13 standard position



waveform when the wave disappeared

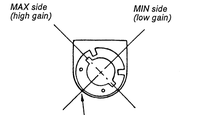
4. Focus Gain Adjustment (coarse adjustment)

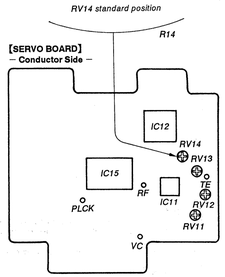
This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV14

Procedure:

1. Set RV14 (SERVO board) to the standard position.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis devise. If there is, turn RV14 slightly clockwise.



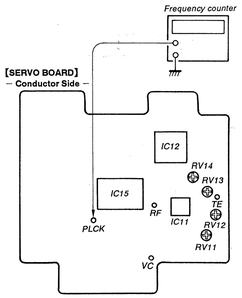


- **When gain is highered…**
  The set does not play because of no focus operation.
- **When gain is highered…**
  Operation noise is heard due to a scratch or a dust, then operation will be unstable.

5. PLL Freerun Frequency Adjustment

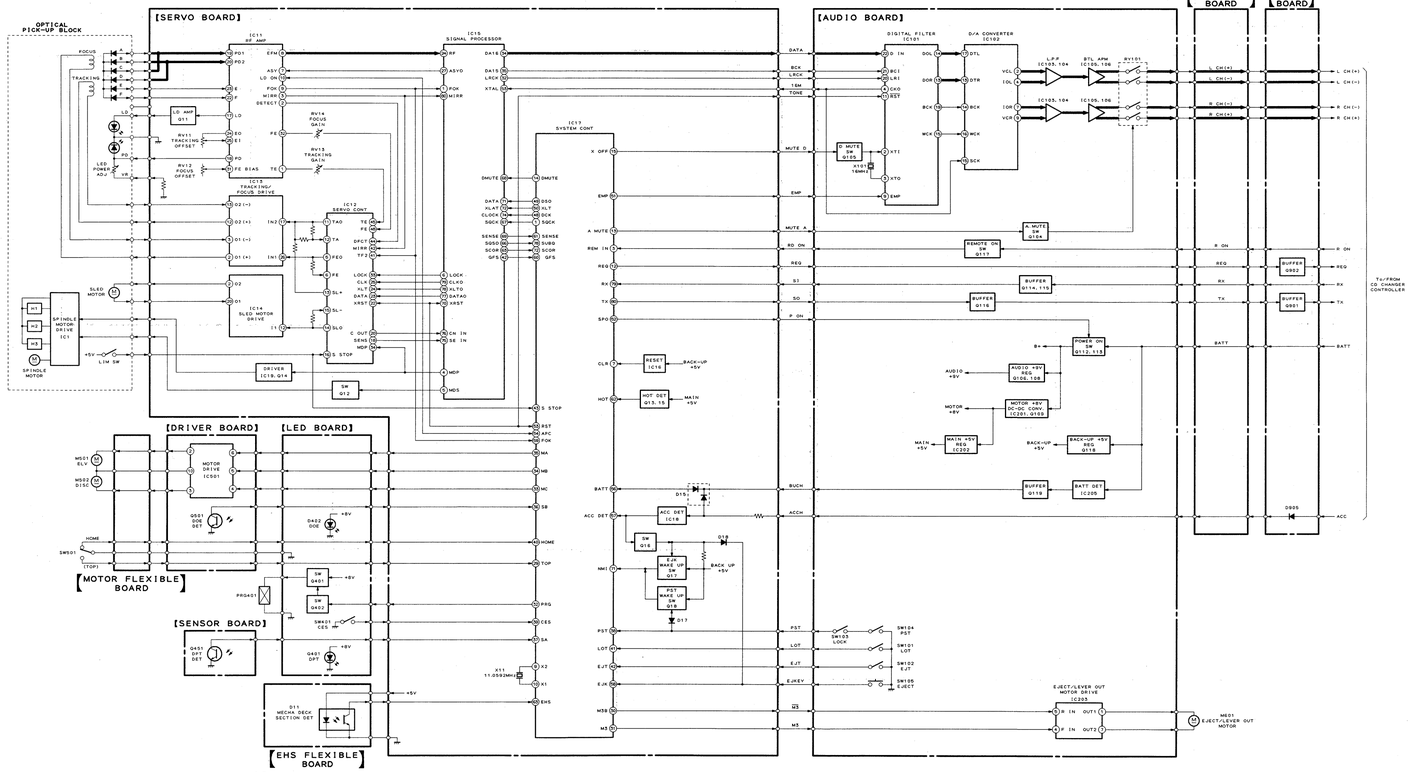
Procedure:

1. Connect frequency counter to Pin ㉔ of IC15 (Test point PLCK).
2. Confirm the frequency is 4.3218 MHz ± 10 kHz.



SECTION 3
DIAGRAMS

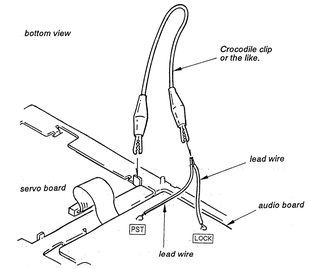
3-1. BLOCK DIAGRAM



• Before Checking the Component Side of Audio Board

It is impossible to play CD in the condition the audio board is removed only from the chassis.
(The system controller IC17 judges there is no disc magazine when SW103 (LOCK) and SW104 (PST) don't turn on. Because of it, the set goes out of order.)
Prepare as follows before checking.

1. Solder lead wires (approx. 10 cm long) on TP LOCK and TP PST.
2. Turn power on and play a disc.
3. Connect the lead wires soldered in Item 1 to chassis ground with a crocodile clip or the like.
4. Remove the audio board.



• Semiconductor Lead Layouts

BA6295AFP-TI

CXD2500AQ (BQ)

μPD78238GC-226-3B9

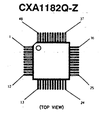
GP1S06

CXA1081Q

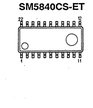
L88MS05T-FA

EC10DS2
MA111
MA8051-M
MA8062-L
MA8360

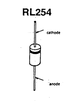
CXA1182Q-Z



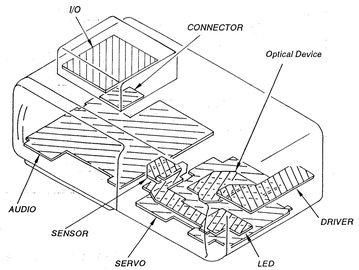
SM5840CS-ET



RL254



• Circuit Boards Location



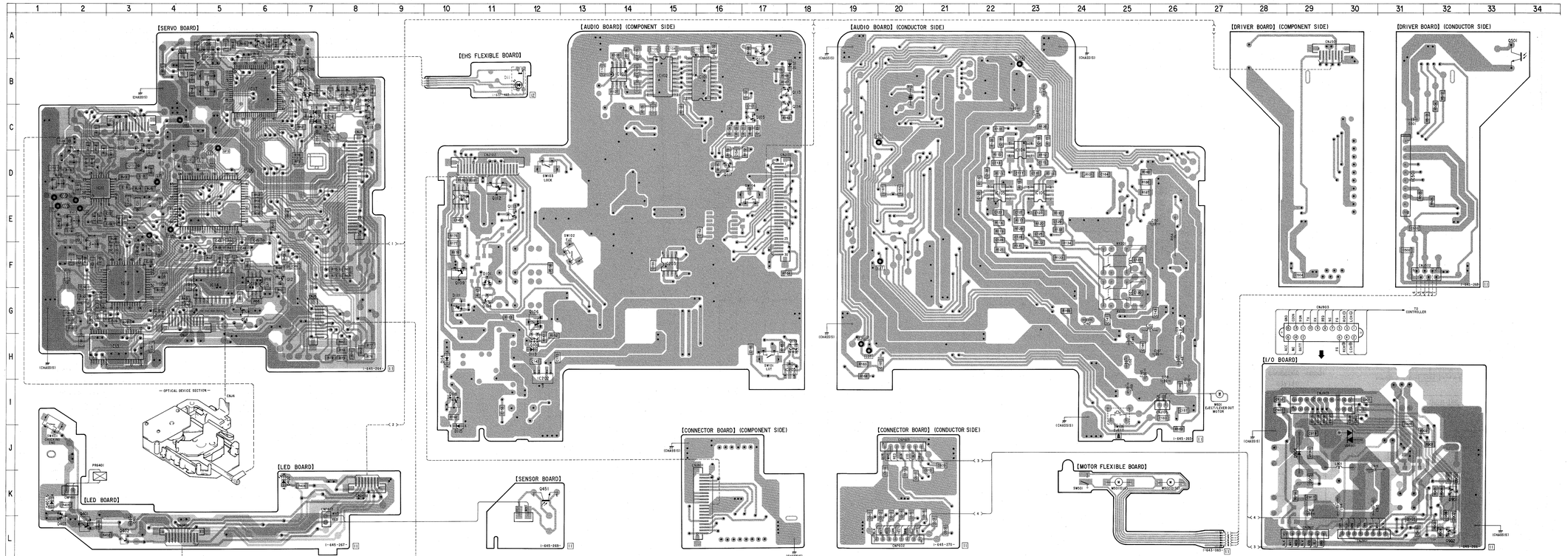
3-2. SCHEMATIC DIAGRAM

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ▭ : B + Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CNP1.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

3-3. PRINTED WIRING BOARDS

• See page 13 for Semiconductor Lead Layouts and Circuit Boards Location.



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D11	B-12	IC201	E-10
D15	B-7	IC202	H-12
D16	B-7	IC203	F-15
D17	C-7	IC205	H-18
D18	C-7	IC501	D-31
D101	F-11		
D111	G-10	Q11	C-3
D112	B-18	Q12	F-6
D113	H-12	Q13	A-6
D114	H-10	Q14	G-6
D115	J-10	Q15	A-6
D401	K-1	Q16	B-8
D402	K-6	Q17	B-8
D403	L-2	Q18	C-8
D901	K-32	Q104	G-11
D902	L-32	Q105	C-17
D903	L-31	Q106	G-12
D905	K-29	Q108	H-12
D906	J-29	Q109	F-10
		Q112	D-11
IC11	D-2	Q113	E-11
IC12	F-3	Q114	C-18
IC13	H-3	Q115	B-18
IC14	F-5	Q116	A-17
IC15	E-5	Q117	D-16
IC16	A-5	Q118	I-10
IC17	B-6	Q119	H-18
IC18	B-8	Q401	L-2
IC19	F-6	Q402	L-3
IC101	B-16	Q451	K-12
IC102	B-15	Q501	A-33
IC103	B-14	Q901	K-32
IC104	C-23	Q902	L-32
IC105	D-22		
IC106	D-23	VDR901	J-30

Note:

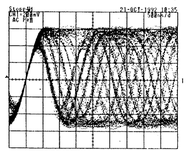
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ◎ : Pattern of the rear side.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

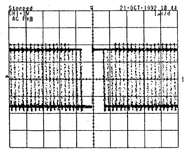
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

• Waveforms

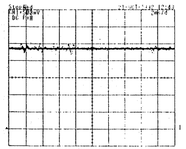
❶ RF 200mV/DIV 500ns/DIV



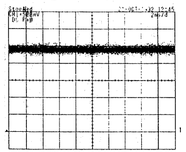
❷ IC11 ⑧ 1V/DIV 1 μs/DIV



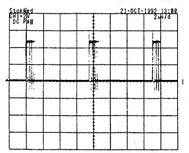
❸ IC11 ⑫ 500mV/DIV 2ms/DIV



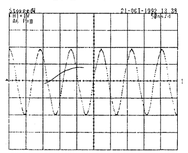
❹ IC11 ① 500mV/DIV 2ms/DIV



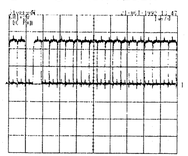
❺ IC15 ④ 2V/DIV 2 μs/DIV



❾ IC17 ⑨, ⑩ 1V/DIV 50ns/DIV

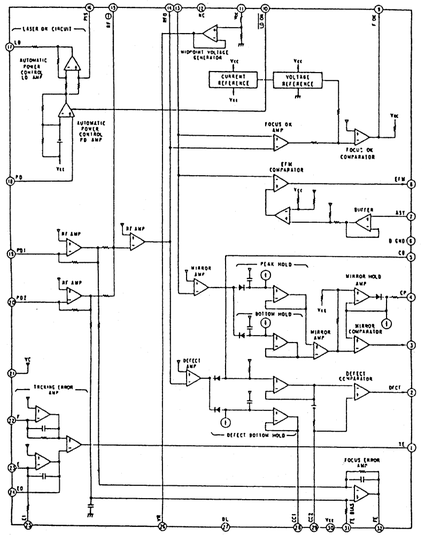


❿ CNJ4 ⑦ 2V/DIV 1 μs/DIV

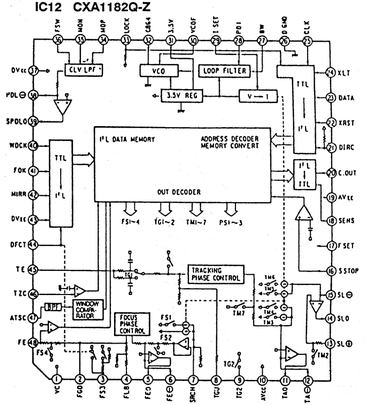


• IC Block Diagrams

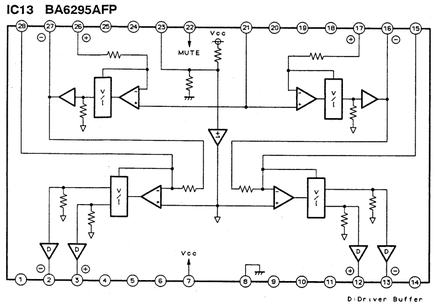
IC11 CXA1081Q



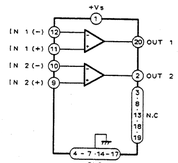
IC12 CXA1182Q-Z



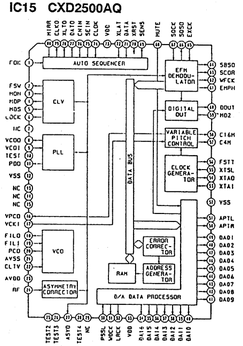
IC13 BA6295AFP



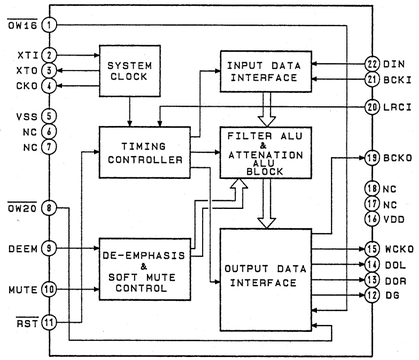
IC14 L2726



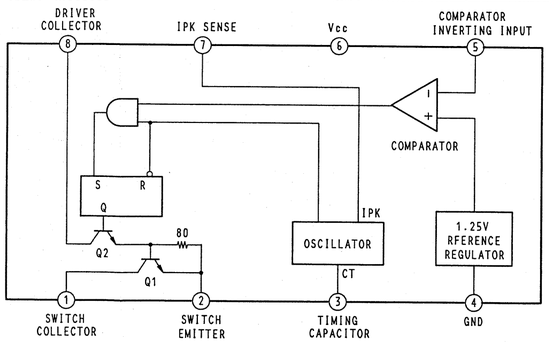
IC15 CXD2500AQ



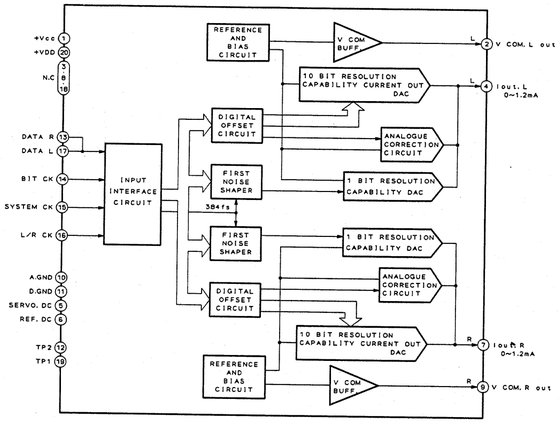
IC101 SM5840CS



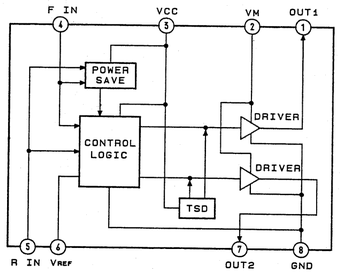
IC201 MC33063



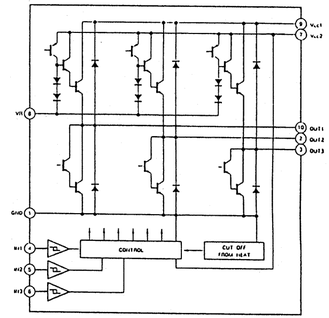
IC102 PCM67U



IC203 BA6287F



IC501 BA6247N



IC17 SYSTEM CONTROLL MICROCOMPUTER (μPD78238GC-226-3B9) PIN FUNCTION DESCRIPTION

PIN	PORT	SIGNAL NAME	I/O	ACT	FUNCTION
1	P32/SCK	SQCLK	O	H/L	SUBQ Clock output
2	P33/SO/SB0		O		
3	P34/TO0	REM IN	I	L	Remote signal input
4	P35/TO1		O		
5	P36/TO2		O		
6	P37/TO3	TEST	O	⎍⎍	Test tone output (Not used)
7	RESET	CLR	I	⎍	Microcomputer reset signal input
8	VDD	VDD	I	–	Positive power supply (+5 V)
9	X2	X2	I	–	System clock (11.06 MHz)
10	X1	X1	I	–	System clock (11.06 MHz)
11	VSS	VSS	I	–	GND
12	PO0	REQ	O	L	REQ output to master
13	PO1	A-MUTE	O	L	Audio mute output
14	PO2	D-MUTE	O	H	Digital mute output
15	PO3	XOFF	O	H	Oscillating stop output
16	PO4	ROM/AUDIO	O	H/L	ROM/Audio select output (Not used)
17	PO5	REM OUT	O	H	Remote output (CD ON) (Not used)
18	PO6		O		
19	PO7		O		
20	P67/REFRQ		O		
21	P66/WAIT	AUX	O	H	(Not used)
22	P65/WR		O		
23	P64/RD		O		
24	P63/A19		O		
25	P62/A18		O		
26	P61/A17		O		
27	P60/A16		O		
28	P57/A15		O		
29	P56/A14	TOP	I	L	Elevator TOP SW input (Not used)
30	P55/A13	M3 NOT	O	H	Disc pack motor reverse rotation output
31	P54/A12	M3	O	H	Disc pack motor output
32	P53/A11	PRG	O	H	Plunger output
33	P52/A10	MC	O	H	Loading motor output (C)
34	P51/A9	MB	O	H	Loading motor output (B)
35	P50/A8	MA	O	H	Loading motor output (A)
36	P47/AD7	SB	I	H	Sensor B input
37	P46/AD6	SA	I	H	Sensor A input
38	P45/AD5	PST	I	H	Magazine pack IN SW input
39	P44/AD4	CES	I	L	Chucking completion SW input
40	P43/AD3	HOME	I	L	Elevator home position SW input

PIN	PORT	SIGNAL NAME	I/O	ACT	FUNCTION
41	P42/AD2	LOT	I	L	Disc reset completion SW input
42	P41/AD1	EJT	I	L	Magazine eject completion SW input
43	P40/AD0	SSTOP	I	H	Sled limit SW input
44	ASTB		O		
45	VSS		–		GND
46	MODE		I		GND (Using internal ROM)
47	P10/PWM0		O		
48	P11/PWM1	DCK	O	H/L	SSP, DSP Clock output
49	P12	DSO	O	H/L	SSP, DSP Data output
50	P13	XLT	O	H/L	SSP, DSP Latch output
51	P14	EMPH	O	H	EMPHASIS output
52	P15	SPO	O	H	Power ON output
53	P16	RESET	O	L	Servo system IC reset output
54	P17	APC	O	L	Laser output
55	VDD	VDD	–		Positive power supply (+5 V)
56	P70/ANI0	BATT	I	H	BATT Detect output
57	P71/ANI1	ACC	I	H	ACC Detect input
58	P72/ANI2	EJKEY	I	L	EJECT key input
59	P73/ANI3	FOK	I	H	FOK input
60	P74/ANI4	GFS	I	L	GFS input
61	P75/ANI5	SENS	I	H/L	SENS input
62	P76/ANI6	HOT	I	H	HOT detect input
63	P77/ANI7	EHS	I	L	Elevator position detect input
64	AVDD		–	–	VDD (Positive power supply for A/D converter)
65	AVREF1		–	–	VDD (Reference voltage for A/D converter)
66	AVSS		–	–	VSS (GND for A/D converter)
67	ANO0		O		
68	ANO1		O		
69	AVREF2		–	–	VDD (Reference voltage for D/A converter)
70	AVREF3		–	–	GND (Reference voltage for D/A converter)
71	P20/NMI	WAKE UP	I	⌐↑	Microcomputer WAKE UP signal input
72	P21/INTP0	SCOR	I	↓¬	SCOR input
73	P22/INTP1		I		VDD (Pull-up)
74	P23/INTP2/CI		I		VDD (Pull-up)
75	P24/INTP3		I		VDD (Pull-up)
76	P25/INTP4/ASCK		I		VDD (Pull-up)
77	P26/INTP5		I		VDD (Pull-up)
78	P27/SI	SUBQ	I	H/L	SUBQ data input
79	P30/RxD	RxD	I	H/L	Communication with master (data input)
80	P31/TxD	TxD	O	H/L	Communication with master (data output)

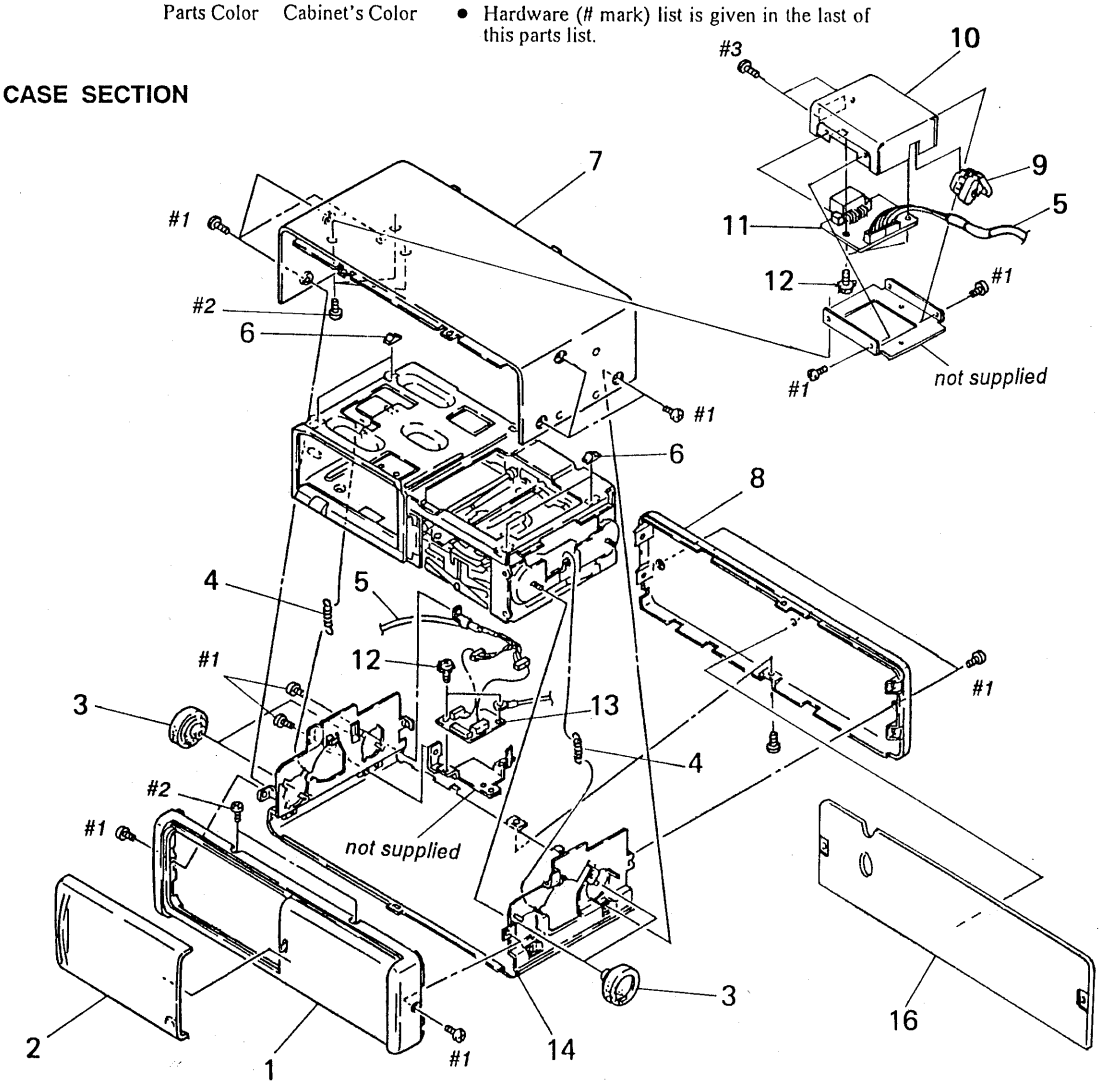
SECTION 4
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

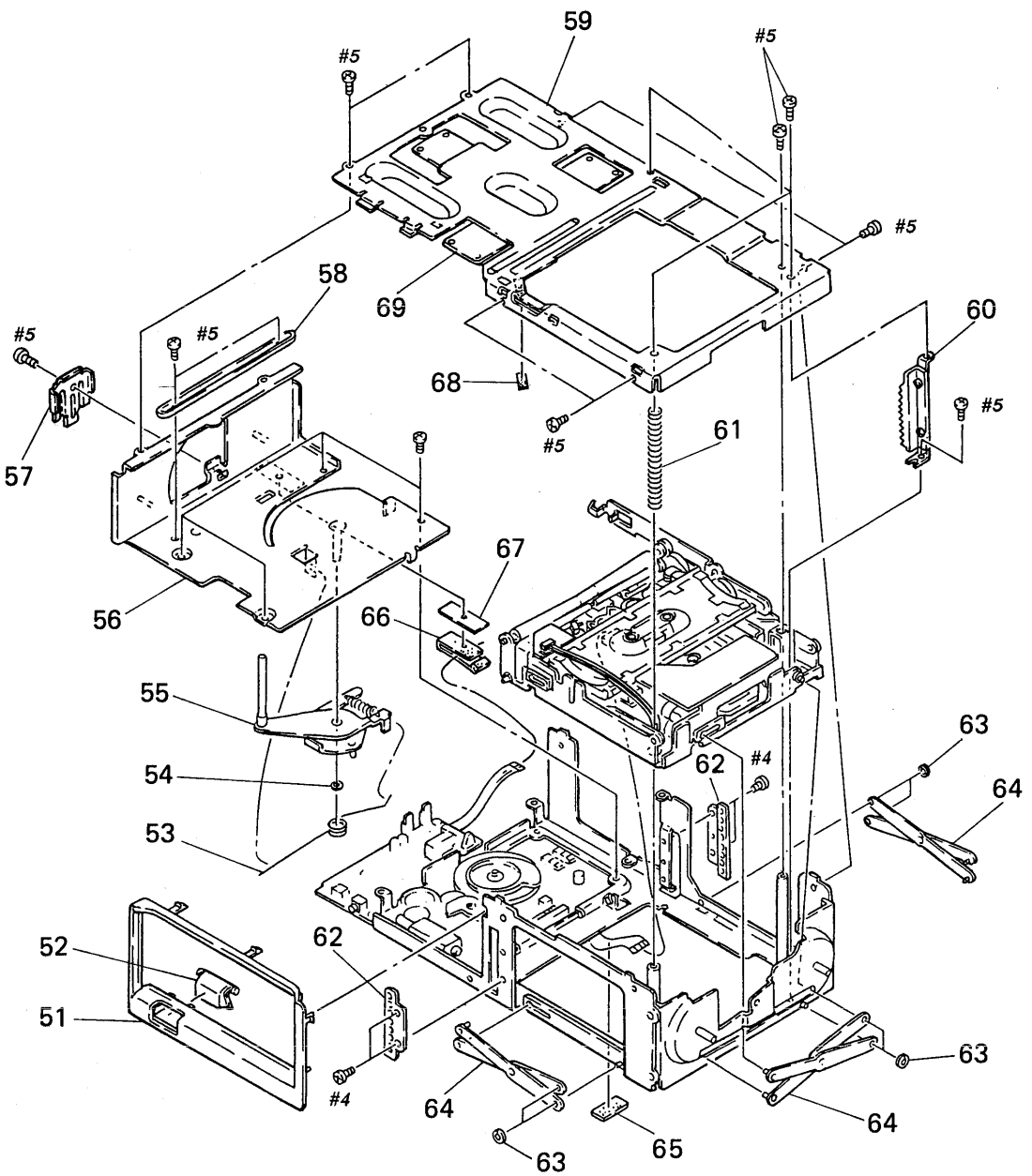
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-3364-866-1	PANEL ASSY, FRONT	
2	3-377-983-01	DOOR, FRONT	
3	3-375-501-01	DAMPER (CNG)	
4	3-384-060-01	SPRING (FL), TENSION	
5	1-696-561-21	CORD (WITH CONNECTOR)	
6	3-348-750-01	CUSHION (DAMPER)	
7	3-377-984-11	CASE (UPPER)	
8	3-377-996-01	COVER (REAR)	
9	2-352-626-01	BUSHING, CORD	
* 10	3-388-288-01	CASE (I/O)	
* 11	A-3295-219-A	I/O BOARD, COMPLETE	
12	3-376-464-11	SCREW(+PTT 2.6X6), GROUND POINT	
* 13	1-645-270-11	CONNECTOR BOARD	
14	3-377-995-01	CASE (LOWER)	
* 16	3-388-289-01	SHIELD SHEET	

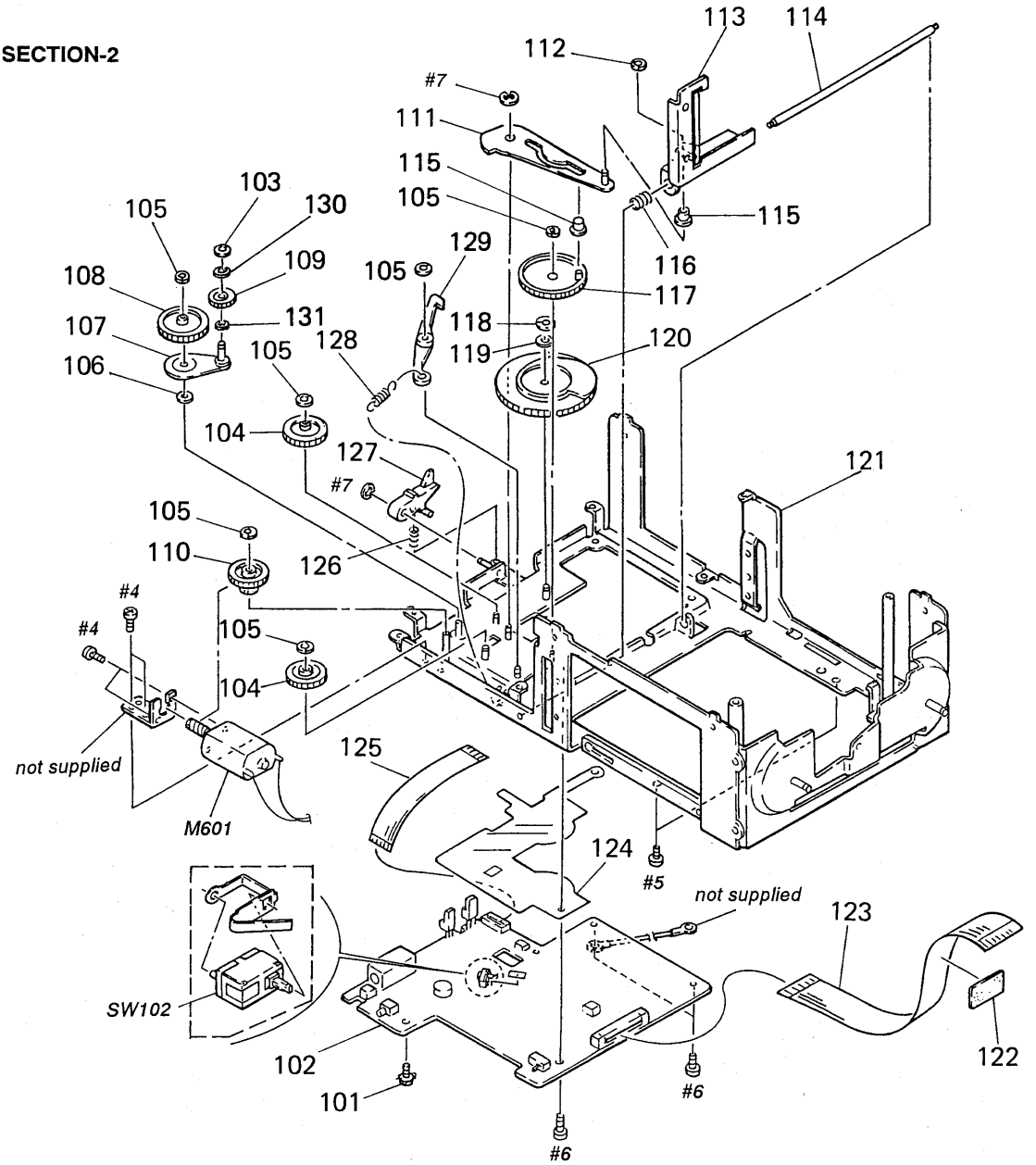
(2) MD SECTION-1



Ref. No.	Part No.	Description	Remark
* 51	3-364-436-01	ESCUTCHEON	
52	3-364-437-01	BUTTON (EJ)	
53	3-364-478-01	SPRING (EJ)	
54	3-377-720-01	WASHER, POLYETHYLENE	
* 55	X-3366-411-1	LEVER (EJ) ASSY	
* 56	X-3362-334-1	CHASSIS (MZ) ASSY	
* 57	3-384-224-01	BRACKET (TR)	
* 58	3-364-434-01	GUIDE (MZ)	
* 59	X-3362-347-1	COVER (MD) ASSY	
60	X-3366-493-1	RACK ASSY	

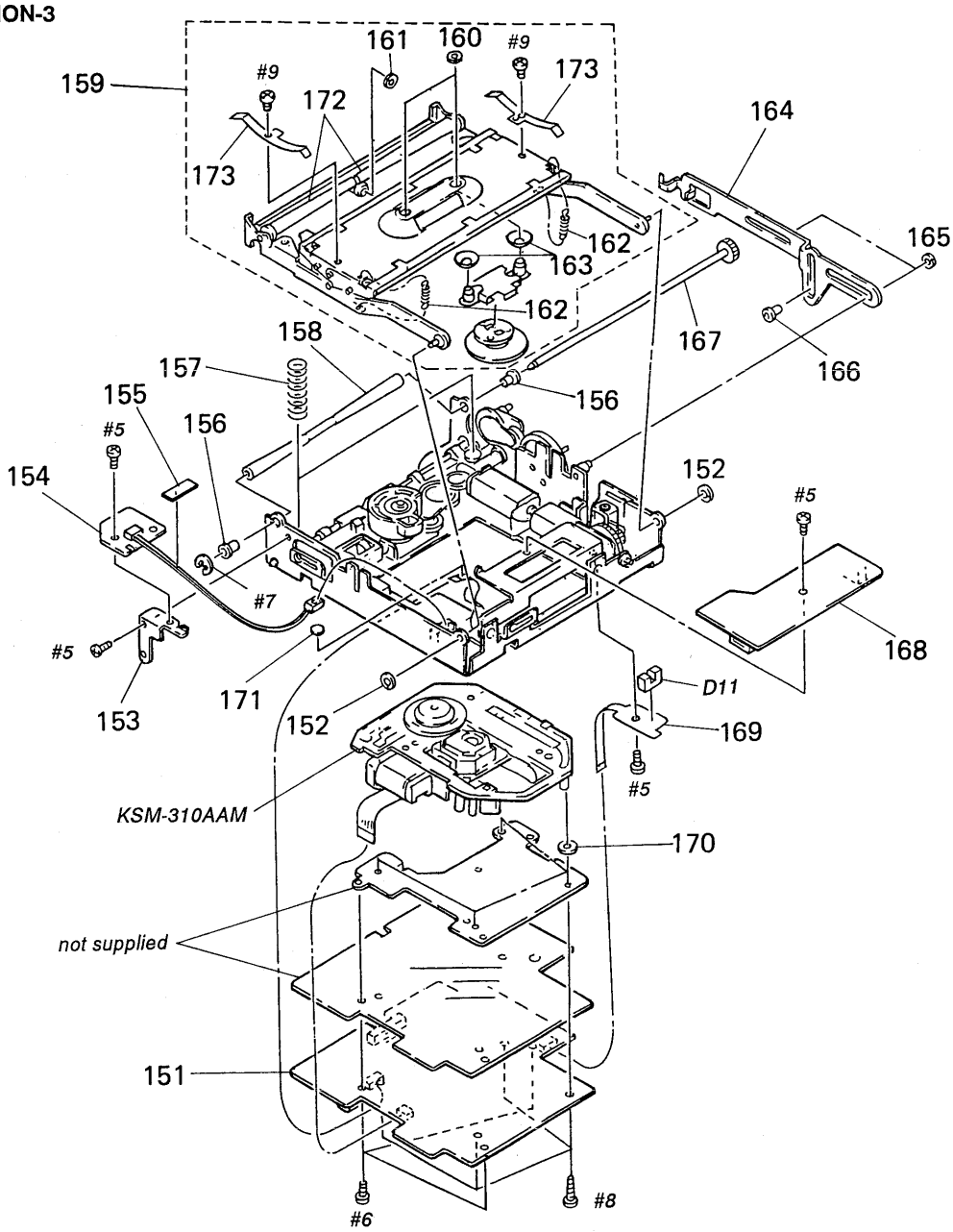
Ref. No.	Part No.	Description	Remark
61	3-370-364-01	SPRING, COMPRESSION	
* 62	3-364-427-01	CATCHER	
63	3-377-719-01	WASHER, POLYETHYLENE	
* 64	X-3362-348-1	LEVER (X) ASSY	
65	9-911-844-XX	CUSHION, BATTERY	
* 66	3-384-223-01	HOLDER (FLEXIBLE)	
* 67	3-386-476-01	TAPE (FLEXIBLE)	
* 68	3-346-962-01	CUSHION (EJ)	
69	X-3364-798-1	SPRING (MZ) ASSY	

(3) MD SECTION-2



Ref. No.	Part No.	Description	Remark
101	3-376-464-11	SCREW(+PTT 2.6X6),GROUND POINT	
* 102	A-3295-215-A	AUDIO BOARD, COMPLETE	
103	3-377-719-11	WASHER, POLYETHLENE	
104	3-364-420-01	GEAR (M)	
105	3-377-719-01	WASHER, POLYETHYLENE	
106	3-316-308-00	WASHER	
107	X-3362-328-1	LEVER (KMZ) ASSY	
108	3-364-417-01	GEAR (L)	
109	3-364-415-01	GEAR (KS)	
110	3-364-413-01	WHEEL (B), WORM	
* 111	X-3362-329-1	LEVER (DR) ASSY	
112	3-379-490-11	WASHER, POLYETHYLENE	
* 113	X-3362-324-1	SLIDER (DR) ASSY	
* 114	3-364-502-01	SHAFT (SDR)	
115	3-364-506-01	ROLLER (SL)	
116	3-568-315-01	SPRING, COMPRESSION	
117	3-364-432-01	GEAR (DR)	
118	3-377-720-21	WASHER, POLYETHYLENE	
119	3-373-013-01	SPRING (EJ CAM)	
120	3-364-411-01	GEAR (EJ), CAM	
* 121	X-3362-331-1	CHASSIS (MD) ASSY	
122	9-911-844-XX	CUSHION, BATTERY	
123	1-642-837-11	PC BOARD, ELEVATOR FLEXIBLE	
* 124	3-386-478-01	SHEET (AU), INSULATING	
125	1-645-263-11	PC BOARD, CONNECTOR FLEXIBLE	
126	3-370-385-01	SPRING, COMPRESSION	
* 127	3-364-431-01	LEVER (MZ LOCK)	
128	3-531-866-01	SPRING, TENSION	
129	3-364-433-01	STOPPER (DR)	
130	3-386-361-01	WASHER, TEFLON	
131	3-364-387-11	SPRING (F)	
M601	X-3362-325-1	MOTOR ASSY (EJECT/LEVER OUT)	
SW102	1-571-754-51	SWITCH, PUSH (1KEY) (EJT)	

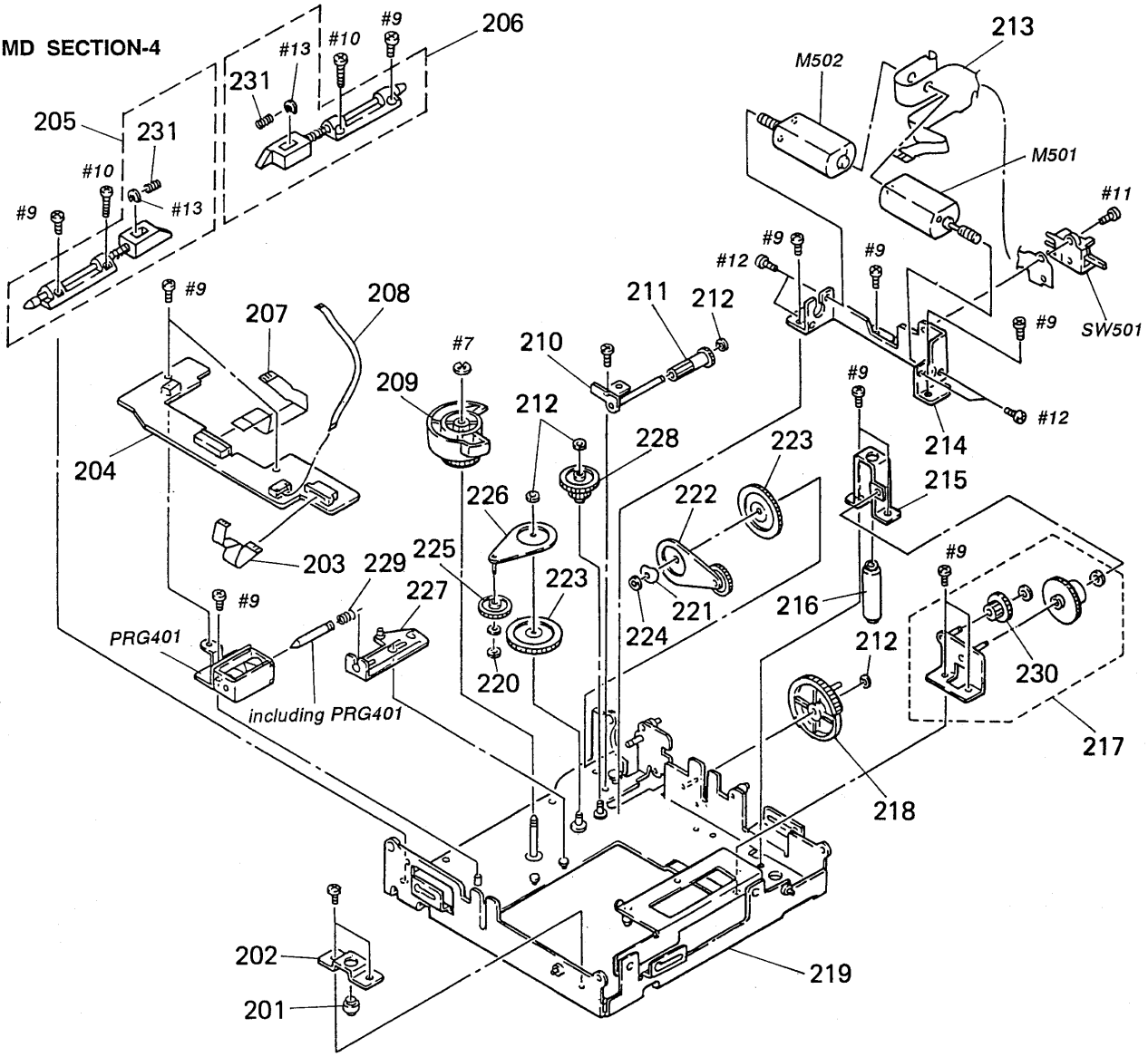
(4) MD SECTION-3



Ref. No.	Part No.	Description	Remark
* 151	A-3295-214-A	MOUNTED PCB, SERVO	
152	3-377-719-01	WASHER, POLYETHYLENE	
* 153	3-368-565-01	BRACKET (PPT)	
* 154	1-645-269-11	PC BOARD, SENSOR	
* 155	3-387-131-01	CUSHION	
156	3-364-421-01	BEARING (ROLLER)	
157	3-364-508-01	SPRING, COMPRESSION	
158	3-323-231-02	ROLLER (LOWER)	
* 159	X-3362-336-1	ARM (R) ASSY	
160	3-341-752-01	WASHER, POLYETHYLENE	
161	3-341-752-11	WASHER, POLYETHYLENE	
162	3-371-504-01	SPRING, TENSION	

Ref. No.	Part No.	Description	Remark
163	3-364-387-01	SPRING (F)	
* 164	3-364-380-01	LEVER, SLIDE	
165	3-377-720-11	WASHER, POLYETHYLENE	
166	3-364-506-01	ROLLER (SL)	
167	X-3362-345-1	GEAR ASSY, ROLLER	
* 168	1-645-268-11	PC BOARD, DRIVER	
169	1-637-483-11	PC BOARD, EMS FLEXIBLE	
* 170	3-387-948-01	SPACER (W)	
* 171	3-384-225-01	CUSHION (L)	
172	X-3329-518-1	ROLLER (UPPER) ASSY	
173	3-364-391-01	SPRING (DH)	

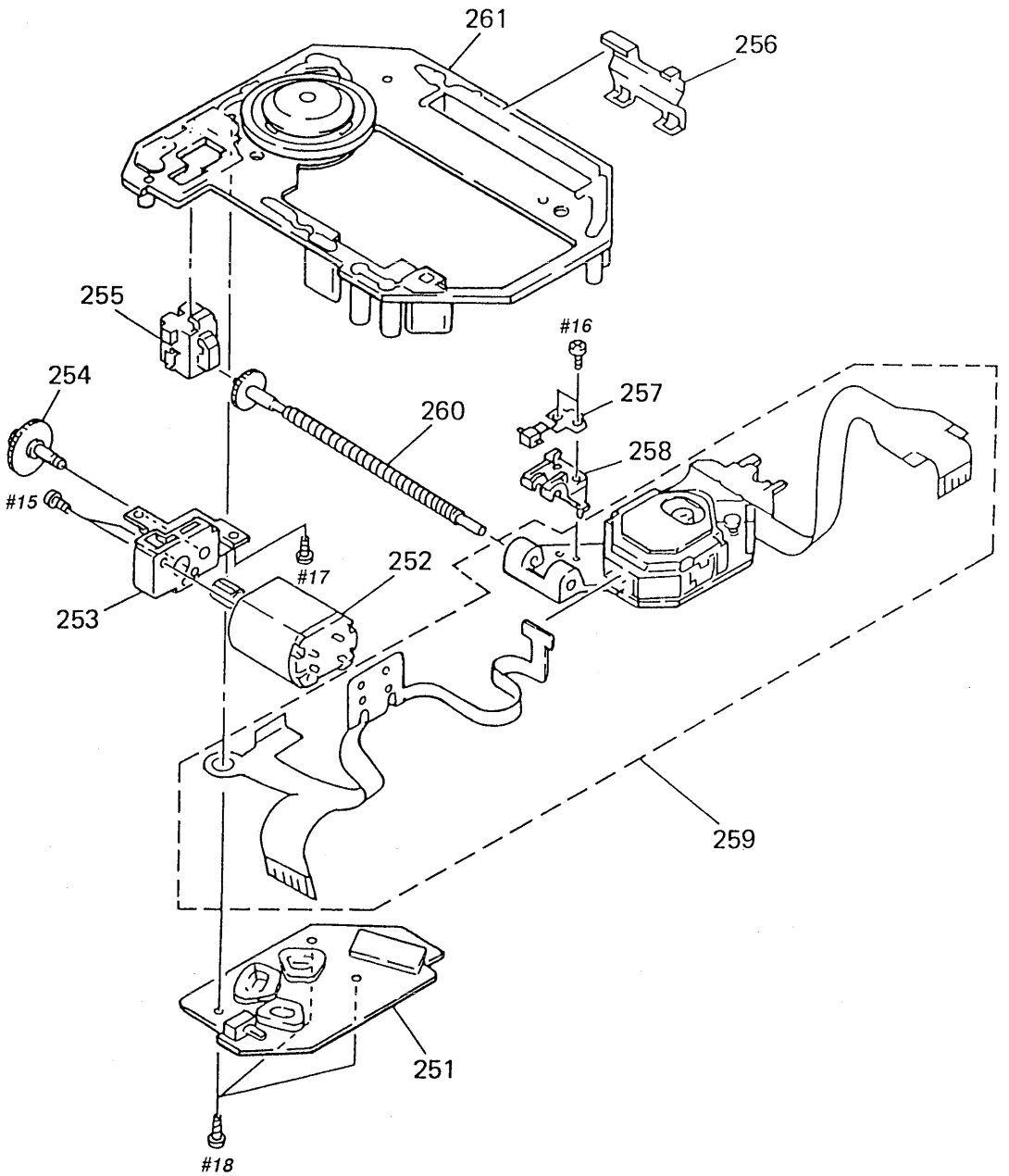
(5) MD SECTION-4



Ref. No.	Part No.	Description	Remark
* 201	3-370-363-01	BEARING (EV2)	
* 202	3-364-401-01	BRACKET (BEARING B)	
203	1-642-972-11	PC BOARD, DRIVER FLEXIBLE	
204	1-645-267-11	LED BOARD	
205	X-3362-487-1	LOCK (F) ASSY	
206	X-3362-486-1	LOCK (B) ASSY	
207	1-690-132-11	CORD, CONNECTION (FLAT TYPE)	
208	1-690-131-11	CORD, CONNECTION (FLAT TYPE)	
209	3-364-419-01	GEAR (R), CAM	
210	X-3362-343-1	BRACKET (WWR) ASSY	
211	3-364-416-01	WHEEL (R), WORM	
212	3-377-719-01	WASHER, POLYETHYLENE	
213	1-643-083-11	PC BOARD, MOTOR FLEXIBLE	
* 214	3-375-789-03	BRACKET (EV MOTOR)	
* 215	3-364-400-01	BRACKET (BEARING F)	
* 216	3-364-461-01	BEARING (EV)	
217	X-3365-803-2	GEAR ASSY, EV	
218	3-364-418-01	GEAR (SL)	
* 219	X-3362-346-5	CHASSIS (EV) ASSY	
220	3-377-719-11	WASHER, POLYETHYLENE	

Ref. No.	Part No.	Description	Remark
221	3-364-387-11	SPRING (F)	
222	X-3363-690-1	GEAR (KW) ASSY	
223	3-364-417-01	GEAR (L)	
224	3-377-719-11	WASHER, POLYETHYLENE	
225	3-364-422-01	GEAR (K)	
226	X-3362-342-1	LEVER (KRA) ASSY	
* 227	X-3362-344-1	SLIDER (KR) ASSY	
228	3-364-505-01	WHEEL (C), WORM	
229	3-353-804-01	SPRING, COMPRESSION	
230	3-346-918-01	WHEEL, WORM	
231	3-308-717-01	SPRING, COMPRESSION (PAUSE)	
M501	X-3362-325-1	MOTOR ASSY (ELEVATOR UP/DOWN)	
M502	X-3362-325-1	MOTOR ASSY (DISC LOADING/SAVE)	
PRG401	1-454-580-11	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY	

(6) OPTICAL PICK-UP BLOCK (KSM-310AAM)



Ref. No.	Part No.	Description	Remark
251	8-835-456-01	DC MOTOR SSC-02E01S	
252	X-2625-210-1	SLED MOTOR GEAR ASSY	
* 253	2-625-513-01	BASE, DRIVING	
254	2-625-507-01	GEAR (B2)	
* 255	A-4910-348-B	RETAINER ASSY, THRUST	
* 256	2-625-514-01	COVER, FLEXIBLE	

Ref. No.	Part No.	Description	Remark
257	2-625-516-01	SPRING (A) FEED	
258	2-625-515-01	RACK (AT)	
⚠ 259	8-848-178-01	OPTICAL PICK-UP KSS-310A	
260	X-2625-209-1	SCREW ASSY, SLED	
261	X-2625-270-2	CHASSIS ASSY, OMD	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

AUDIO

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3295-215-A	AUDIO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C102	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C103	1-162-638-11	CERAMIC CHIP	1uF		16V
C104	1-162-638-11	CERAMIC CHIP	1uF		16V
C105	1-162-638-11	CERAMIC CHIP	1uF		16V
C106	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C107	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C108	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C109	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C110	1-162-638-11	CERAMIC CHIP	1uF		16V
C111	1-128-108-11	ELECT	22uF	20%	16V
C112	1-128-108-11	ELECT	22uF	20%	16V
C113	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C114	1-163-014-00	CERAMIC CHIP	0.0027uF	5%	50V
C115	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C116	1-163-014-00	CERAMIC CHIP	0.0027uF	5%	50V
C117	1-162-638-11	CERAMIC CHIP	1uF		16V
C118	1-126-177-11	ELECT	100uF	20%	10V
C120	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C121	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C122	1-162-638-11	CERAMIC CHIP	1uF		16V
C123	1-162-638-11	CERAMIC CHIP	1uF		16V
C124	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C125	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C128	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C129	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C130	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C131	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C132	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C133	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C134	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C135	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C140	1-124-589-11	ELECT	47uF	20%	16V
C141	1-162-638-11	CERAMIC CHIP	1uF		16V
C142	1-162-638-11	CERAMIC CHIP	1uF		16V
C143	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C144	1-162-638-11	CERAMIC CHIP	1uF		16V
C145	1-128-290-61	ELECT	82uF	20%	10V
C146	1-128-290-61	ELECT	82uF	20%	10V
C147	1-128-290-61	ELECT	82uF	20%	10V
C148	1-128-290-61	ELECT	82uF	20%	10V
C149	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C150	1-128-297-61	ELECT	56uF	20%	16V
C151	1-162-638-11	CERAMIC CHIP	1uF		16V
C152	1-126-177-11	ELECT	100uF	20%	10V
C153	1-162-638-11	CERAMIC CHIP	1uF		16V
C154	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C155	1-162-638-11	CERAMIC CHIP	1uF		16V
C156	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C157	1-162-638-11	CERAMIC CHIP	1uF		16V
C158	1-124-635-00	ELECT	220uF	20%	6.3V
C159	1-124-635-00	ELECT	220uF	20%	6.3V
C160	1-162-638-11	CERAMIC CHIP	1uF		16V
C161	1-126-177-11	ELECT	100uF	20%	10V
C162	1-162-638-11	CERAMIC CHIP	1uF		16V
C163	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C164	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C165	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C166	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C167	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
		< JACK >			
CNJ101	1-569-481-21	CONNECTOR, FPC 30P			
CNJ102	1-569-478-21	CONNECTOR, FPC 20P			
* CNJ103	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D101	8-719-400-18	DIODE MA152WK			

Ref. No.	Part No.	Description			Remark
D111	8-719-938-78	DIODE SB10-05PCP			
D112	8-719-404-49	DIODE MA111			
D113	8-719-404-49	DIODE MA111			
D114	8-719-210-33	DIODE EC10DS2			
D115	8-719-422-61	DIODE MA8062-L			
		< IC >			
IC101	8-759-501-31	IC SM5840CS			
IC102	8-759-070-98	IC PCM67U-A			
IC103	8-759-924-46	IC BA4560F			
IC104	8-759-924-46	IC BA4560F			
IC105	8-759-924-46	IC BA4560F			
IC106	8-759-924-46	IC BA4560F			
IC201	8-759-067-71	IC MC33063AD			
IC202	8-759-822-99	IC L88MS05T-FA			
IC203	8-759-040-83	IC BA6287F			
IC205	8-759-940-45	IC S-8054HN-CB-S			
		< JUMPER RESISTOR >			
JR101	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L102	1-414-002-11	COIL, CHOKE 33uH			
L103	1-414-003-11	COIL, CHOKE 150uH			
		< TRANSISTOR >			
Q104	8-729-881-21	TRANSISTOR 2SC2812-L5			
Q105	8-729-421-22	TRANSISTOR UN2211			
Q106	8-729-807-34	TRANSISTOR 2SB1123-S			
Q108	8-729-903-10	TRANSISTOR FMW1			
Q109	8-729-820-46	TRANSISTOR 2SB1202FAS			
Q112	8-729-820-46	TRANSISTOR 2SB1202FAS			
Q113	8-729-421-22	TRANSISTOR UN2211			
Q114	8-729-421-22	TRANSISTOR UN2211			
Q115	8-729-881-21	TRANSISTOR 2SC2812-L5			
Q116	8-729-421-22	TRANSISTOR UN2211			
Q117	8-729-881-21	TRANSISTOR 2SC2812-L5			
Q118	8-729-807-51	TRANSISTOR 2SD1623-S			
Q119	8-729-903-10	TRANSISTOR FMW1			
		< RESISTOR >			
R101	1-216-017-00	METAL CHIP	47	5%	1/10W
R102	1-216-025-00	METAL CHIP	100	5%	1/10W
R103	1-216-025-00	METAL CHIP	100	5%	1/10W
R104	1-216-025-00	METAL CHIP	100	5%	1/10W
R105	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R106	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R107	1-216-062-00	METAL CHIP	3.6K	5%	1/10W
R108	1-216-062-00	METAL CHIP	3.6K	5%	1/10W
R109	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R110	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R111	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R112	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R116	1-216-073-00	METAL CHIP	10K	5%	1/10W
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
R118	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R119	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R120	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R121	1-216-001-00	METAL CHIP	10	5%	1/10W
R122	1-216-001-00	METAL CHIP	10	5%	1/10W
R129	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R130	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R131	1-216-001-00	METAL CHIP	10	5%	1/10W
R132	1-216-001-00	METAL CHIP	10	5%	1/10W
R133	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R134	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R135	1-216-073-00	METAL CHIP	10K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R153	1-216-041-00	METAL CHIP	470	5%	1/10W
R154	1-216-341-11	METAL OXIDE	0.22	5%	1W F
R155	1-216-041-00	METAL CHIP	470	5%	1/10W
R156	1-216-073-00	METAL CHIP	10K	5%	1/10W
R157	1-216-073-00	METAL CHIP	10K	5%	1/10W
R160	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R163	1-216-073-00	METAL CHIP	10K	5%	1/10W
R164	1-216-073-00	METAL CHIP	10K	5%	1/10W
R165	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R166	1-216-089-00	METAL CHIP	47K	5%	1/10W
R167	1-216-073-00	METAL CHIP	10K	5%	1/10W
R168	1-216-073-00	METAL CHIP	10K	5%	1/10W
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R176	1-216-025-00	METAL CHIP	100	5%	1/10W
R177	1-216-198-00	METAL CHIP	1K	5%	1/8W
R178	1-216-198-00	METAL CHIP	1K	5%	1/8W
R180	1-216-075-00	METAL CHIP	12K	5%	1/10W
R181	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R182	1-216-089-00	METAL CHIP	47K	5%	1/10W
R183	1-216-240-00	METAL GLAZE	56K	5%	1/8W
R184	1-216-114-00	METAL GLAZE	510K	5%	1/10W

Ref.No.	Part No.	Description			Remark
R185	1-216-093-00	METAL CHIP	68K	5%	1/10W
R186	1-216-073-00	METAL CHIP	10K	5%	1/10W
R187	1-216-198-00	METAL CHIP	1K	5%	1/8W
R188	1-216-198-00	METAL CHIP	1K	5%	1/8W
R192	1-216-085-00	METAL CHIP	33K	5%	1/10W
		< RELAY >			
RY101	1-515-614-11	RELAY			
RY201	1-515-614-11	RELAY			
		< SWITCH >			
SW101	1-571-754-31	SWITCH, PUSH (1 KEY) (LOT)			
SW102	1-571-754-31	SWITCH, PUSH (1 KEY) (EJT)			
SW103	1-571-754-31	SWITCH, PUSH (1 KEY) (LOCK)			
SW104	1-571-754-31	SWITCH, PUSH (1 KEY) (PST)			
SW105	1-571-532-51	SWITCH, TACTIL (EJECT)			
		< VIBRATOR >			
X101	1-567-908-11	VIBRATOR, CRYSTAL 16MHz			
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*	1-645-270-11	CONNECTOR BOARD			
		**********			
		< CAPACITOR >			
C601	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C602	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C603	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C604	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C605	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C606	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C607	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C608	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C609	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C610	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C611	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C613	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C614	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
		< JACK >			
CNJ601	1-569-478-21	CONNECTOR, FPC 20P			
		< CONNECTOR >			
* CNP602	1-566-005-11	PIN, CONNECTOR (PC BOARD) 8P			
* CNP603	1-566-004-11	PIN, CONNECTOR (PC BOARD) 7P			
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Ref.No.	Part No.	Description			Remark
*	1-645-268-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C501	1-124-589-11	ELECT	47uF	20%	16V
C502	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C503	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C504	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
		< JACK >			
CNJ501	1-691-799-11	SOCKET, CONNECTOR 8P			
CNJ502	1-565-340-11	SOCKET, CONNECTOR 6P			
		< IC >			
IC501	8-759-511-17	IC BA6247N			
		< TRANSISTOR >			
Q501	8-729-402-08	TRANSISTOR PN147-LF-R			
		< RESISTOR >			
R502	1-216-037-00	METAL CHIP	330	5%	1/10W
R503	1-216-037-00	METAL CHIP	330	5%	1/10W
R504	1-216-037-00	METAL CHIP	330	5%	1/10W
R505	1-216-033-00	METAL CHIP	220	5%	1/10W
R506	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
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	1-637-483-11	EHS FLEXIBLE BOARD			
		**********			
		< DIODE >			
D11	8-719-988-47	DIODE GP1S06			
**********					
*	A-3295-219-A	I/O BOARD, COMPLETE			
		**********			
	1-124-360-00	ELECT	1000uF	20%	16V
		< CAPACITOR >			
C901	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C902	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C903	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C904	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C905	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C906	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C907	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C908	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C909	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C910	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V

Ref. No.	Part No.	Description			Remark
C912	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C913	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C914	1-124-360-00	ELECT	1000uF	20%	16V
C915	1-124-360-00	ELECT	1000uF	20%	16V
C916	1-124-360-00	ELECT	1000uF	20%	16V
C917	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C918	1-124-589-11	ELECT	47uF	20%	16V
C919	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C920	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C926	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
		< JACK >			
* CNJ901	1-506-990-11	PIN, CONNECTOR (PC BOARD) 8P			
* CNJ902	1-506-989-51	PIN, CONNECTOR (PC BOARD) 7P			
CNJ903	1-695-492-11	SOCKET, CONNECTOR 16P			
		< DIODE >			
D901	8-719-018-15	DIODE MA8360			
D902	8-719-018-15	DIODE MA8360			
D903	8-719-404-49	DIODE MA111			
D905	8-719-210-33	DIODE EC10DS2			
D906	8-719-989-16	DIODE 1S2472			
		< JUMPER RESISTOR >			
JR901	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
* L901	1-424-507-11	COIL, CHOKE	1.4mH		
		< TRANSISTOR >			
Q901	8-729-881-21	TRANSISTOR 2SC2812-L5			
Q902	8-729-881-21	TRANSISTOR 2SC2812-L5			
		< RESISTOR >			
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-073-00	METAL CHIP	10K	5%	1/10W
R903	1-216-073-00	METAL CHIP	10K	5%	1/10W
R904	1-216-073-00	METAL CHIP	10K	5%	1/10W
R905	1-216-073-00	METAL CHIP	10K	5%	1/10W
R906	1-216-073-00	METAL CHIP	10K	5%	1/10W
R914	1-216-295-00	METAL CHIP	0	5%	1/10W
		< VARISTOR >			
VDR901	1-807-601-11	VARISTOR, CERAMIC			

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Ref. No.	Part No.	Description			Remark
*	1-645-267-11	LED BOARD			
		*********			
		< CAPACITOR >			
C401	1-124-589-11	ELECT	47uF	20%	16V
		< JACK >			
CNJ401	1-691-800-11	SOCKET, CONNECTOR 11P			
CNJ402	1-691-799-11	SOCKET, CONNECTOR 8P			
		< CONNECTOR >			
* CNP401	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
* CNP403	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
		< DIODE >			
D401	8-719-404-19	DIODE LN1251C			
D402	8-719-404-19	DIODE LN1251C			
D403	8-719-400-18	DIODE MA152WK			
		< TRANSISTOR >			
Q401	8-729-807-34	TRANSISTOR 2SB1123-S			
Q402	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W
R402	1-216-198-00	METAL CHIP	1K	5%	1/8W
R405	1-216-194-00	METAL CHIP	680	5%	1/8W
R406	1-216-194-00	METAL CHIP	680	5%	1/8W
		< SWITCH >			
SW401	1-571-754-31	SWITCH, PUSH (1 KEY) (CHUCKING END)			

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*	1-645-269-11	SENSOR BOARD			
		**********			
		< TRANSISTOR >			
Q451	8-729-402-08	TRANSISTOR PN147-LF-R			

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*	A-3295-214-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C11	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C12	1-104-600-21	ELECT CHIP	33uF	20%	4V
C13	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C14	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C15	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

SERVO

Ref. No.	Part No.	Description			Remark
C16	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C17	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C18	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C19	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C20	1-162-638-11	CERAMIC CHIP	1uF		16V
C21	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C22	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C23	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C24	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C25	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C26	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C27	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C28	1-162-638-11	CERAMIC CHIP	1uF		16V
C29	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C30	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C31	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C32	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C33	1-126-592-11	ELECT CHIP	4.7uF	20%	16V
C34	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C35	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C36	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C37	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C38	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C39	1-104-600-21	ELECT CHIP	33uF	20%	4V
C40	1-162-638-11	CERAMIC CHIP	1uF		16V
C42	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C43	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C44	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C45	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C46	1-162-638-11	CERAMIC CHIP	1uF		16V
C47	1-162-638-11	CERAMIC CHIP	1uF		16V
C48	1-162-638-11	CERAMIC CHIP	1uF		16V
C49	1-126-592-11	ELECT CHIP	4.7uF	20%	16V
C50	1-135-165-11	TANTAL. CHIP	33uF	20%	16V
C51	1-128-535-21	ELECT CHIP	15uF	20%	6.3V
C52	1-162-638-11	CERAMIC CHIP	1uF		16V
C53	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C54	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C56	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C57	1-162-638-11	CERAMIC CHIP	1uF		16V
C58	1-162-638-11	CERAMIC CHIP	1uF		16V
C59	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C60	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C61	1-162-638-11	CERAMIC CHIP	1uF		16V
		< JACK >			
CNJ1	1-691-801-11	SOCKET, CONNECTOR 12P			
CNJ2	1-691-801-11	SOCKET, CONNECTOR 12P			
CNJ3	1-580-438-21	CONNECTOR, FPC 4P			
CNJ4	1-695-513-21	SOCKET, CONNECTOR 30P			
CNJ5	1-691-800-11	SOCKET, CONNECTOR 11P			
		< DIODE >			
D15	8-719-400-18	DIODE MA152WK			
D16	8-719-420-90	DIODE MA8051-M			
D17	8-719-404-49	DIODE MA111			
D18	8-719-404-49	DIODE MA111			
		< IC >			
IC11	8-752-033-14	IC CXA1081Q			
IC12	8-752-037-48	IC CXA1182Q-Z			
IC13	8-759-088-60	IC BA6295AFP			
IC14	8-759-505-70	IC L2726			
IC15	8-752-352-93	IC CXD2500BQ			
IC16	8-759-940-45	IC S-8054HN-CB-S			
IC17	8-759-163-61	IC uPD78238GC-226-3B9			
IC18	8-759-940-45	IC S-8054HN-CB-S			
IC19	8-759-970-89	IC BA10358F			
		< JUMPER RESISTOR >			
JR11	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L11	1-410-381-11	INDUCTOR CHIP 10uH			
L12	1-410-381-11	INDUCTOR CHIP 10uH			
L13	1-410-381-11	INDUCTOR CHIP 10uH			
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q12	8-729-421-22	TRANSISTOR UN2211			
Q13	8-729-881-21	TRANSISTOR 2SC2812-L5			
Q14	8-729-807-51	TRANSISTOR 2SD1623-S			
Q15	8-729-421-22	TRANSISTOR UN2211			
Q16	8-729-881-21	TRANSISTOR 2SC2812-L5			
Q17	8-729-424-12	TRANSISTOR UN2112			
Q18	8-729-424-12	TRANSISTOR UN2112			
		< RESISTOR >			
R11	1-216-093-00	METAL CHIP	68K	5%	1/10W
R12	1-216-093-00	METAL CHIP	68K	5%	1/10W
R13	1-216-093-00	METAL CHIP	68K	5%	1/10W
R14	1-216-093-00	METAL CHIP	68K	5%	1/10W
R15	1-216-097-00	METAL CHIP	100K	5%	1/10W
R16	1-216-097-00	METAL CHIP	100K	5%	1/10W
R17	1-216-024-00	METAL GLAZE	91	5%	1/10W
R18	1-216-150-00	METAL GLAZE	10	5%	1/8W
R19	1-216-073-00	METAL CHIP	10K	5%	1/10W
R20	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W
R22	1-216-073-00	METAL CHIP	10K	5%	1/10W
R23	1-216-077-00	METAL CHIP	15K	5%	1/10W
R24	1-216-079-00	METAL CHIP	18K	5%	1/10W
R25	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R26	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R27	1-216-073-00	METAL CHIP	10K	5%	1/10W
R28	1-216-113-00	METAL CHIP	470K	5%	1/10W
R29	1-216-097-00	METAL CHIP	100K	5%	1/10W
R30	1-216-097-00	METAL CHIP	100K	5%	1/10W
R31	1-216-105-00	METAL CHIP	220K	5%	1/10W
R32	1-216-081-00	METAL CHIP	22K	5%	1/10W
R33	1-216-085-00	METAL CHIP	33K	5%	1/10W
R34	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R35	1-216-103-00	METAL CHIP	180K	5%	1/10W
R36	1-216-097-00	METAL CHIP	100K	5%	1/10W
R37	1-216-103-00	METAL CHIP	180K	5%	1/10W
R38	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R39	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R40	1-216-073-00	METAL CHIP	10K	5%	1/10W
R41	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R42	1-216-081-00	METAL CHIP	22K	5%	1/10W
R43	1-216-085-00	METAL CHIP	33K	5%	1/10W
R44	1-216-085-00	METAL CHIP	33K	5%	1/10W
R45	1-216-081-00	METAL CHIP	22K	5%	1/10W
R46	1-216-085-00	METAL CHIP	33K	5%	1/10W
R47	1-216-073-00	METAL CHIP	10K	5%	1/10W
R48	1-216-085-00	METAL CHIP	33K	5%	1/10W
R49	1-216-049-00	METAL CHIP	1K	5%	1/10W
R50	1-216-073-00	METAL CHIP	10K	5%	1/10W
R51	1-216-041-00	METAL CHIP	470	5%	1/10W
R53	1-216-017-00	METAL CHIP	47	5%	1/10W
R54	1-216-037-00	METAL CHIP	330	5%	1/10W
R55	1-216-037-00	METAL CHIP	330	5%	1/10W
R56	1-216-037-00	METAL CHIP	330	5%	1/10W
R57	1-216-081-00	METAL CHIP	22K	5%	1/10W
R58	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R59	1-216-025-00	METAL CHIP	100	5%	1/10W
R60	1-216-093-00	METAL CHIP	68K	5%	1/10W
R61	1-216-025-00	METAL CHIP	100	5%	1/10W
R62	1-216-093-00	METAL CHIP	68K	5%	1/10W
R63	1-216-073-00	METAL CHIP	10K	5%	1/10W
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W
R65	1-216-041-00	METAL CHIP	470	5%	1/10W
R66	1-216-093-00	METAL CHIP	68K	5%	1/10W
R67	1-216-093-00	METAL CHIP	68K	5%	1/10W
R68	1-216-093-00	METAL CHIP	68K	5%	1/10W
R69	1-216-085-00	METAL CHIP	33K	5%	1/10W
R70	1-216-025-00	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R71	1-216-025-00	METAL CHIP	100	5%	1/10W
R72	1-216-093-00	METAL CHIP	68K	5%	1/10W
R73	1-216-093-00	METAL CHIP	68K	5%	1/10W
R74	1-216-093-00	METAL CHIP	68K	5%	1/10W
R75	1-216-089-00	METAL CHIP	47K	5%	1/10W
R76	1-216-093-00	METAL CHIP	68K	5%	1/10W
R77	1-216-089-00	METAL CHIP	47K	5%	1/10W
R78	1-216-025-00	METAL CHIP	100	5%	1/10W
R79	1-216-025-00	METAL CHIP	100	5%	1/10W
R80	1-216-025-00	METAL CHIP	100	5%	1/10W
R81	1-216-093-00	METAL CHIP	68K	5%	1/10W
R82	1-216-025-00	METAL CHIP	100	5%	1/10W
R83	1-216-060-00	METAL GLAZE	3K	5%	1/10W
R84	1-216-093-00	METAL CHIP	68K	5%	1/10W
R88	1-216-089-00	METAL CHIP	47K	5%	1/10W
R89	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R90	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R91	1-216-085-00	METAL CHIP	33K	5%	1/10W
R92	1-216-097-00	METAL CHIP	100K	5%	1/10W
R93	1-216-097-00	METAL CHIP	100K	5%	1/10W
R95	1-216-073-00	METAL CHIP	10K	5%	1/10W
R96	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R97	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

< VARIABLE RESISTOR >

RV11	1-230-871-11	RES, ADJ, METAL 22K
RV12	1-230-873-11	RES, ADJ, METAL 47K
RV13	1-230-871-11	RES, ADJ, METAL 22K
RV14	1-230-871-11	RES, ADJ, METAL 22K

< THERMISTOR >

TH11	1-808-656-11	THERMISTOR
TH12	1-808-656-11	THERMISTOR
TH61	1-808-656-11	THERMISTOR

< VIBRATOR >

X11	1-579-298-11	VIBRATOR, CRYSTAL 11.0592MHz

****

MISCELLANEOUS

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5	1-696-561-11	CORD (WITH CONNECTOR)
123	1-642-837-11	PC BOARD, ELEVATOR FLEXIBLE
125	1-645-263-11	PC BOARD, CONNECTOR FLEXIBLE
169	1-637-483-11	EHS FLEXIBLE BOARD
203	1-642-972-11	PC BOARD, DRIVER FLEXIBLE
207	1-690-132-11	CORD, CONNECTION (FLAT TYPE)
208	1-690-131-11	CORD, CONNECTION (FLAT TYPE)

Ref. No.	Part No.	Description	Remark
213	1-643-083-11	PC BOARD, MOTOR FLEXIBLE	
251	8-835-456-01	DC MOTOR SSC-02E01S	
252	X-2625-210-1	SLED MOTOR GEAR ASSY	
⚠259	8-848-178-01	OPTICAL PICK-UP KSS-310A	
D11	8-719-988-47	DIODE GP1S06	
M501	X-3362-325-1	MOTOR ASSY (ELEVATOR UP/DOWN)	
M502	X-3362-325-1	MOTOR ASSY (DISC LOADING/SAVE)	
M601	X-3362-325-1	MOTOR ASSY (EJECT/LEVER OUT)	
PRG401	1-454-580-11	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY	

****

HARDWARE LIST

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#1	7-621-773-95	SCREW +PTT 2.6X6 (S)
#2	7-621-775-00	SCREW +B 2.6X3
#3	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT
#4	7-621-255-10	SCREW +P 2X3
#5	7-621-255-20	SCREW +PTT 2X4 (S)
#6	7-621-255-35	SCREW +BVTT 2X5 (S)
#7	7-624-104-04	STOP RING 2.0, TYPE -E
#8	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
#9	7-627-554-37	SCREW, PRECISION +P 2X1.8 TYPE1
#10	7-621-255-55	SCREW +PTT 2X8 (S)
#11	7-621-773-86	SCREW +P 2.6X4
#12	7-627-553-27	SCREW, PRECISION +P 2X2.5
#13	7-624-102-04	STOP RING 1.5, TYPE -E
#15	7-628-253-10	SCREW +PS 2X5
#16	7-627-852-17	SCREW, PRECISION +P 1.7X4
#17	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3
#18	7-685-102-19	SCREW +P 2X4 TYPE 2

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

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